LG Electronics Inc.

P/N : 3829RAT110Q

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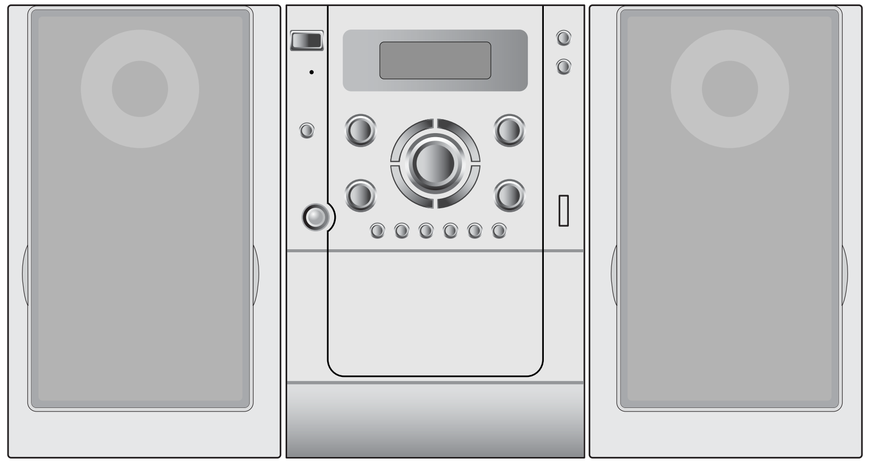
SERVICE MANUAL MODEL : LX-U150D, LXS-U150

LG Electronics Inc.

LG

MICRO COMPONENT SYSTEM

SERVICE MANUAL



MODEL : LX-U150D, LXS-U150

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SECTION 1. GENERAL

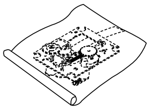
❑ SERVICING PRECAUTIONS

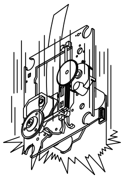
NOTES REGARDING HANDLING OF THE PICK-UP

1. Notes for transport and storage

1) The pick-up should always be left in its conductive bag until immediately prior to use.
2) The pick-up should never be subjected to external pressure or impact.

Storage in conductive bag

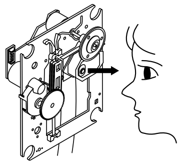




Drop impact

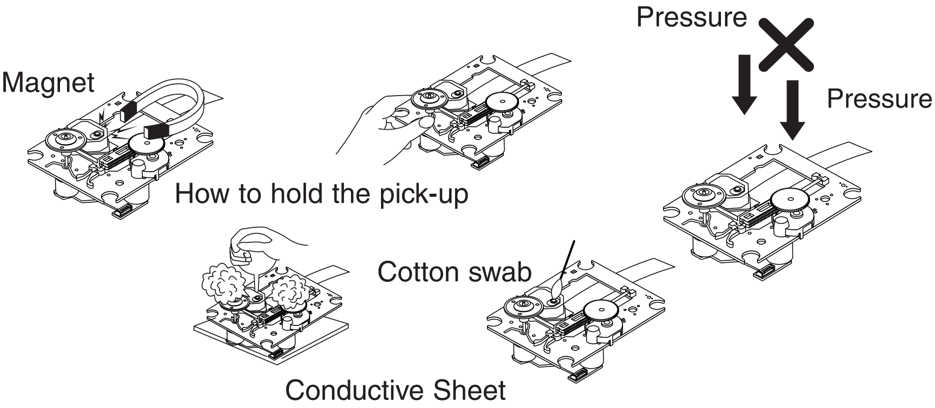
2. Repair notes

1) The pick-up incorporates a strong magnet, and so should never be brought close to magnetic materials.
2) The pick-up should always be handled correctly and carefully, taking care to avoid external pressure and impact. If it is subjected to strong pressure or impact, the result may be an operational malfunction and/or damage to the printed-circuit board.
3) Each and every pick-up is already individually adjusted to a high degree of precision, and for that reason the adjustment point and installation screws should absolutely never be touched.
4) Laser beams may damage the eyes!
   Absolutely never permit laser beams to enter the eyes!
   Also NEVER switch ON the power to the laser output part (lens, etc.) of the pick-up if it is damaged.



NEVER look directly at the laser beam, and don't let contact fingers or other exposed skin.

5) Cleaning the lens surface
   If there is dust on the lens surface, the dust should be cleaned away by using an air bush (such as used for camera lens). The lens is held by a delicate spring. When cleaning the lens surface, therefore, a cotton swab should be used, taking care not to distort this.



6) Never attempt to disassemble the pick-up.
   Spring by excess pressure. If the lens is extremely dirty, apply isopropyl alcohol to the cotton swab. (Do not use any other liquid cleaners, because they will damage the lens.) Take care not to use too much of this alcohol on the swab, and do not allow the alcohol to get inside the pick-up.

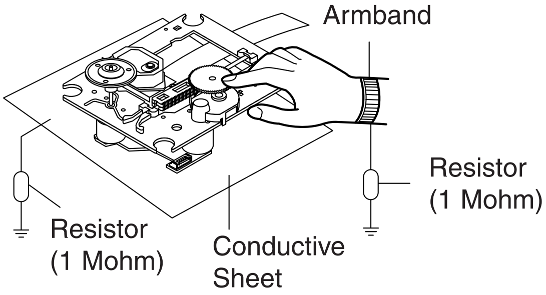
NOTES REGARDING COMPACT DISC PLAYER REPAIRS

1. Preparations

1) Compact disc players incorporate a great many ICs as well as the pick-up (laser diode). These components are sensitive to, and easily affected by, static electricity. If such static electricity is high voltage, components can be damaged, and for that reason components should be handled with care.
2) The pick-up is composed of many optical components and other high-precision components. Care must be taken, therefore, to avoid repair or storage where the temperature of humidity is high, where strong magnetism is present, or where there is excessive dust.

2. Notes for repair

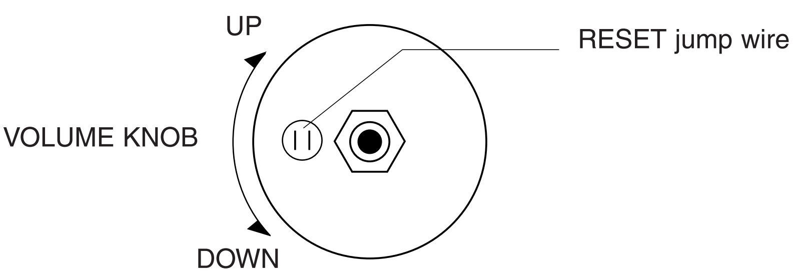
1) Before replacing a component part, first disconnect the power supply lead wire from the unit
2) All equipment, measuring instruments and tools must be grounded.
3) The workbench should be covered with a conductive sheet and grounded.
   When removing the laser pick-up from its conductive bag, do not place the pick-up on the bag. (This is because there is the possibility of damage by static electricity.)
4) To prevent AC leakage, the metal part of the soldering iron should be grounded.
5) Workers should be grounded by an armband (1MΩ)
6) Care should be taken not to permit the laser pick-up to come in contact with clothing, in order to prevent static electricity changes in the clothing to escape from the armband.
7) The laser beam from the pick-up should NEVER be directly facing the eyes or bare skin.



CLEARING MALFUNCTION

You can reset your unit to initial status if malfunction occur(button malfunction, display, etc.).
Using a pointed good conductor(such as driver), simply short the RESET jump wire on the inside of the volume knob for more than 3 seconds.
If you reset your unit, you must reenter all its settings(stations, clock, timer)

NOTE: 1. To operate the RESET jump wire, pull the volume rotary knob and release it.
2. If you wish to operate the RESET jump wire, it is necessary to unplug the power cord.



❑ ESD PRECAUTIONS

Electrostatically Sensitive Devices (ESD)

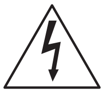
Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive Devices (ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ESD devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESD devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.
6. Do not remove a replacement ESD device from its protective package until immediately before you are ready to install it. (Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).
7. Immediately before removing the protective material from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will by installed.

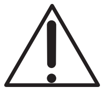
CAUTION : BE SURE NO POWER IS APPLIED TO THE CHASSIS OR CIRCUIT, AND OBSERVE ALL OTHER SAFETY PRECAUTIONS.

8. Minimize bodily motions when handing unpackaged replacement ESD devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ESD device).

CAUTION. GRAPHIC SYMBOLS



THE LIGHTNING FLASH WITH APROWHEAD SYMBOL. WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF UNINSULATED “DANGEROUS VOLTAGE” THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION IN SERVICE LITERATURE.

❑ SPECIFICATIONS

SECTION		MODEL	LX-U150A/D/X
General		Power supply	Refer to the back panel of the unit
		Power consumption	20W
		Mass	3kg
		External dimensions(WxHxD)	146x238x251mm
CD		Frequency Response	40 ~ 18000Hz
		Signal-to-noise ratio	60dB
		Dynamic Range	60dB
TUNER	FM	Tuning Range	87.5 ~ 108.0MHz or 65 ~74MHz, 87.5 ~ 108.0MHz
		Intermediate Frequency	10.7MHz
		Signal-to-noise ratio	55/50dB(Mono/Stereo)
		Frequncy Response	60 ~ 1000Hz
	AM	Tuning Range	522 ~ 1620kHz or 520 ~ 1720kHz
		Intermediate Frequency	450kHz
		Signal-to-noise ratio	35dB
		Frequency Response	100 ~ 1800Hz
AMP		Output Power	5W + 5W
		T.H.D	0.5%
		Frequncy Response	60 ~ 20000Hz
		Signal-to-noise ratio	60dB
TAPE		Tape Speed	4.75cm/sec
		Wow Flutter	0.3%(MTT-111, JIS-WTD)
		F.F/REW time	120sec(C-60)
		Frequency Response	250 ~ 8000 Hz
		Signal-to-noise ratio	40dB(P/B)/38dB(R/P)
		Channel Separation	32dB(P/B)/30dB(R/P)
		Erase Ratio	50dB(MTT-5511)
SPEAKER		**MODEL**	**LXS-U150**
		Type	1Way 1 Speaker
		Impedance	4Ω
		Frequency Response	100 ~ 18000Hz
		Sound Pressure Level	86dB/W(1m)
		Rated Input Power	5W
		Max.Input Power	10W
		Net Dimension(WxHxD)	146x238x185mm
		Net weight	1.4kg

NOTE : Specification are subject to change without notice in the course of product improvement.

MEMO

SECTION 2. ELECTRICAL

❑ ADJUSTMENTS

This set has been aligned at the factory and normally will not require further adjustment. As a result, it is not recommended that any attempt is made to modificate any circuit. If any parts are replaced or if anyone tampers with the adjustment, realignment may be necessary.

IMPORTANT

1. Check Power-source voltage.
2. Set the function switch to band being aligned.
3. Turn volume control to minimum unless otherwise noted.
4. Connect low side of signal source and output indicator to chassis ground unless otherwise specified.
5. Keep the signal input as low as possible to avoid AGC and AC action.

TAPE DECK ADJUSTMENT

	Item	Test Tape	Test Point	Adjustment	Adjust for	Remark
1	Azimuth	MTT-114	Speaker out	Azimuth Screw	Maximum	
2	Bias Frequency	Tape Rec	Tape Rec	L201	65V ± 5kHz	

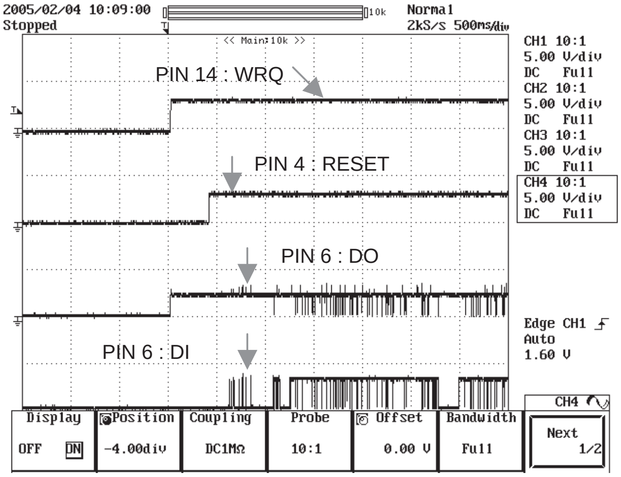
TUNER ADJUSTMENT

	Item	Test Frequency	Test Point	Adjustment	Adjust for	Remark
1	DC Voltage	FM 98MHz 60dBuV	Oscilloscope	L104	0V ± 50mV	R145
2	AM IF	AM 603kHz 80dBu	Speaker out	L103	Maximum	Maximum Waveform

❑ WAVEFORMS OF MAJOR CHECK POINT

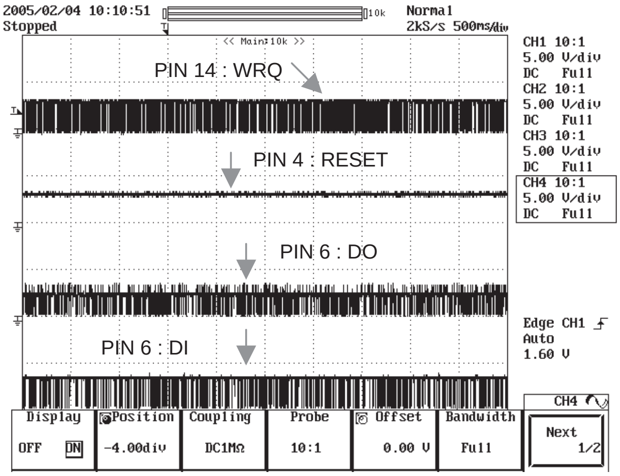
#1. MICOM INTERFACE WAVEFORM

(PN805 PIN 3, 4, 5, 6) during power on



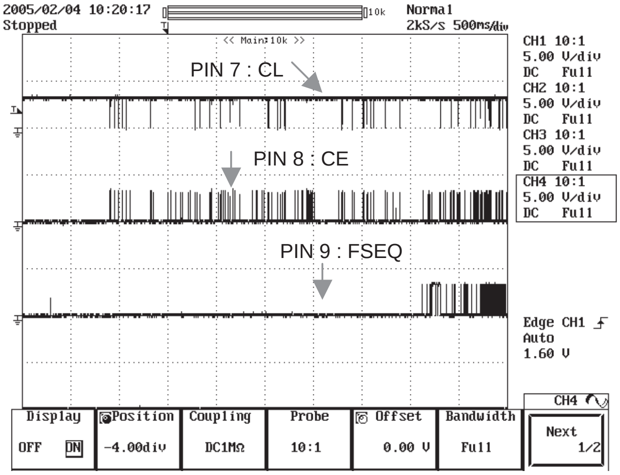
#1. MICOM INTERFACE WAVEFORM

(PN805 PIN 3, 4, 5, 6) during normal play



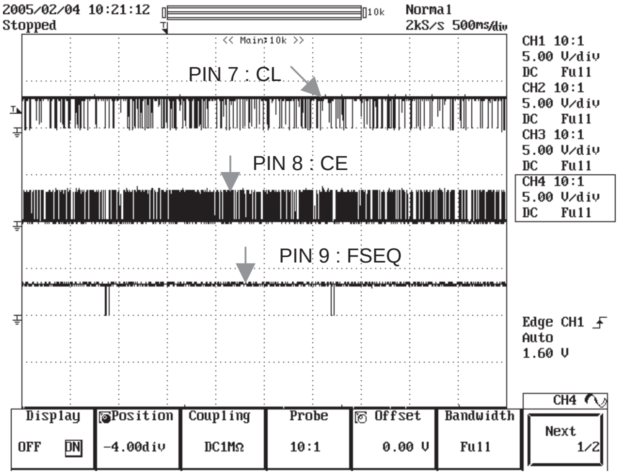
#1. MICOM INTERFACE WAVEFORM

(PN805 PIN 7, 8, 9) during power on



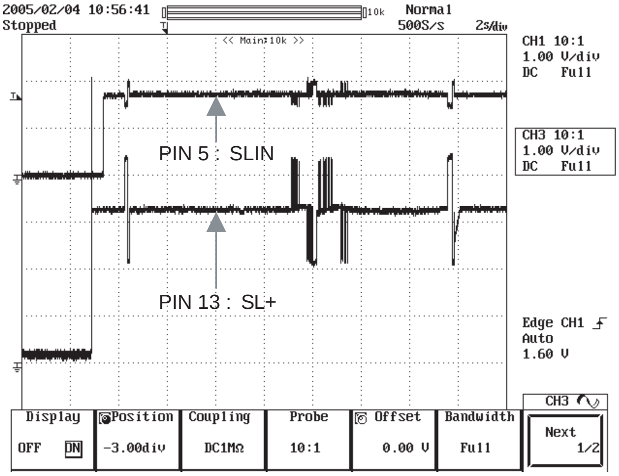
#1. MICOM INTERFACE WAVEFORM

(PN805 PIN 7, 8, 9) during normal play



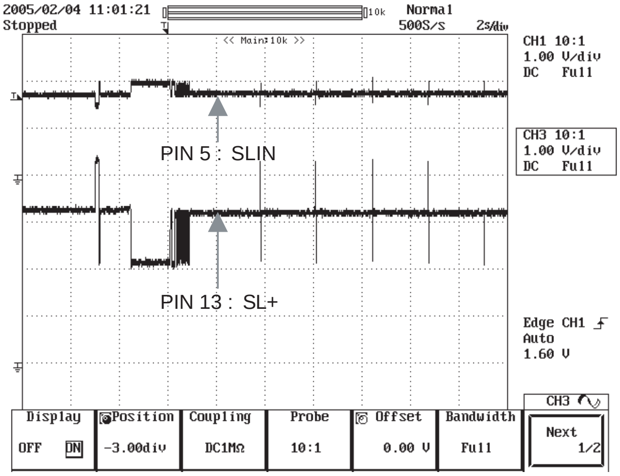
#2. SLED DRIVE AND MOTOR WAVEFORM

(IC802 PIN 5, 13) when focus search



#2. SLED DRIVE AND MOTOR WAVEFORM

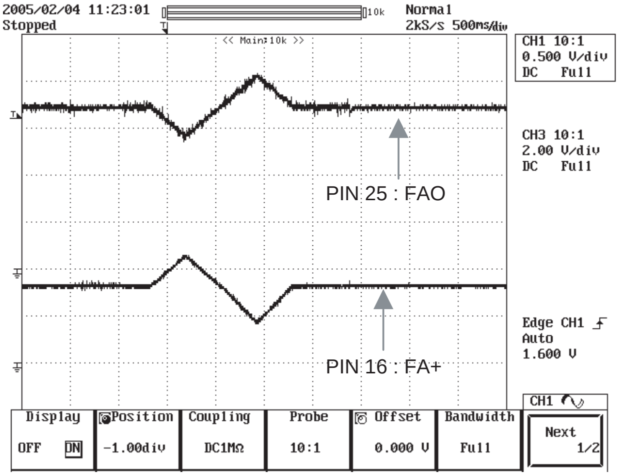
(IC802 PIN 5, 13) during normal play



#3. FOCUS DRIVE AND MOTOR WAVEFORM

(IC802 PIN 25, IC802 PIN 16)

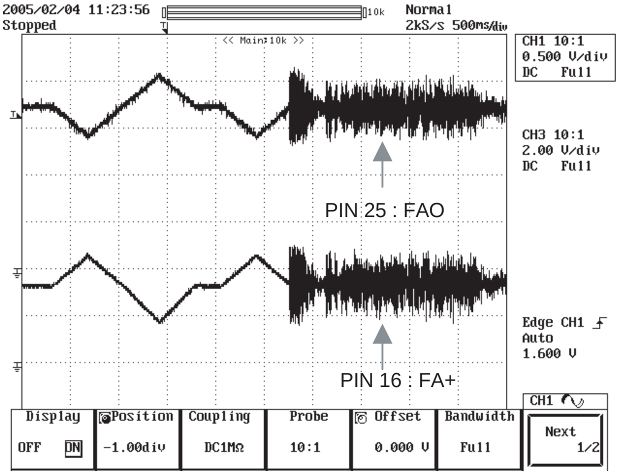
- When focus search failed or there is no disc on tray



#3. FOCUS DRIVE AND MOTOR WAVEFORM

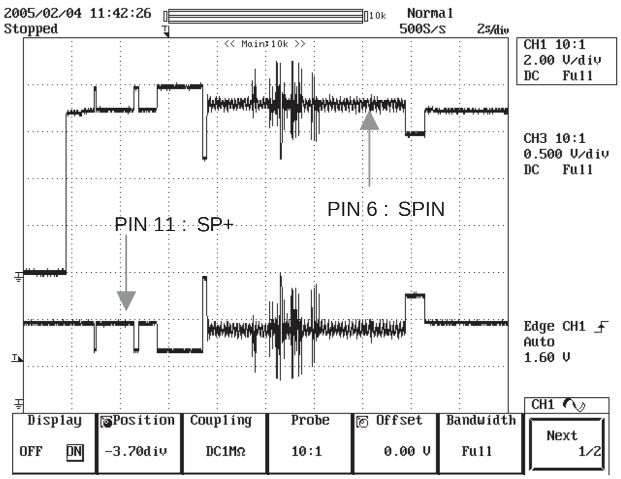
(IC802 PIN 25, IC802 PIN 16)

- There is disc on tray and focus search success



#4. SPINDLE DRIVE AND MOTOR WAVEFORM

(IC802 PIN 6, 11) when TOC reading



2005/02/04 11:42:26
Stopped
Normal
500S/s 2s/div
<< Main:10k >>

CH1 10:1
2.00 V/div
DC Full

CH3 10:1
0.500 V/div
DC Full

Edge CH1
Auto
1.60 V

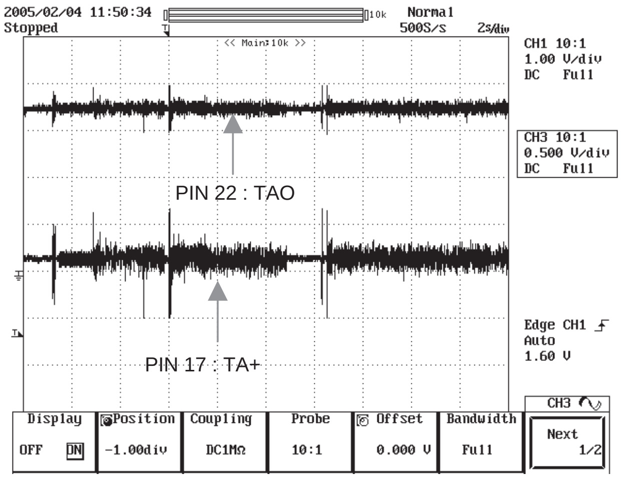
Display	Position	Coupling	Probe	Offset	Bandwidth	CH1
OFF ON	-3.70div	DC1MΩ	10:1	0.00 V	Full	Next 1/2

PIN 11 : SP+

PIN 6 : SPIN

#5. TRACK DRIVE AND MOTOR WAVEFORM

(IC802 PIN 22 , IC802 PIN 17) during normal play



2005/02/04 11:50:34
Stopped
Normal
500S/s 2s/div
<< Main:10k >>

CH1 10:1
1.00 V/div
DC Full

CH3 10:1
0.500 V/div
DC Full

Edge CH1
Auto
1.60 V

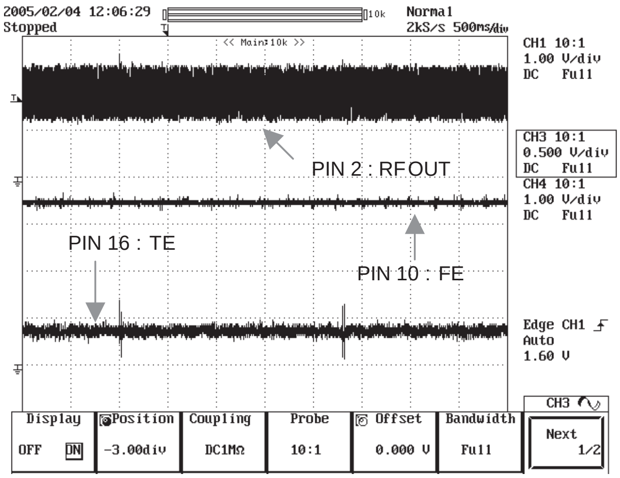
Display	Position	Coupling	Probe	Offset	Bandwidth	CH3
OFF ON	-1.00div	DC1MΩ	10:1	0.000 V	Full	Next 1/2

PIN 22 : TAO

PIN 17 : TA+

#6. RF, FOCUS AND TRACKING ERROR WAVEFORM

(IC801 PIN 2, 10, 16) during normal play



2005/02/04 12:06:29
Stopped
Normal
2kS/s 500ms/div
<< Main:10k >>

CH1 10:1
1.00 V/div
DC Full

CH3 10:1
0.500 V/div
DC Full

CH4 10:1
1.00 V/div
DC Full

Edge CH1
Auto
1.60 V

Display	Position	Coupling	Probe	Offset	Bandwidth	CH3
OFF ON	-3.00div	DC1MΩ	10:1	0.000 V	Full	Next 1/2

PIN 2 : RF OUT

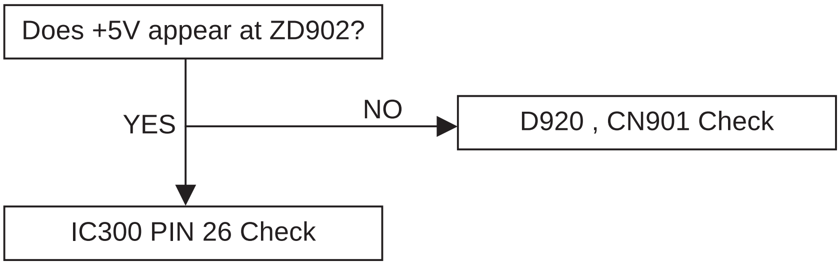
PIN 16 : TE

PIN 10 : FE

❑ TROUBLESHOOTING

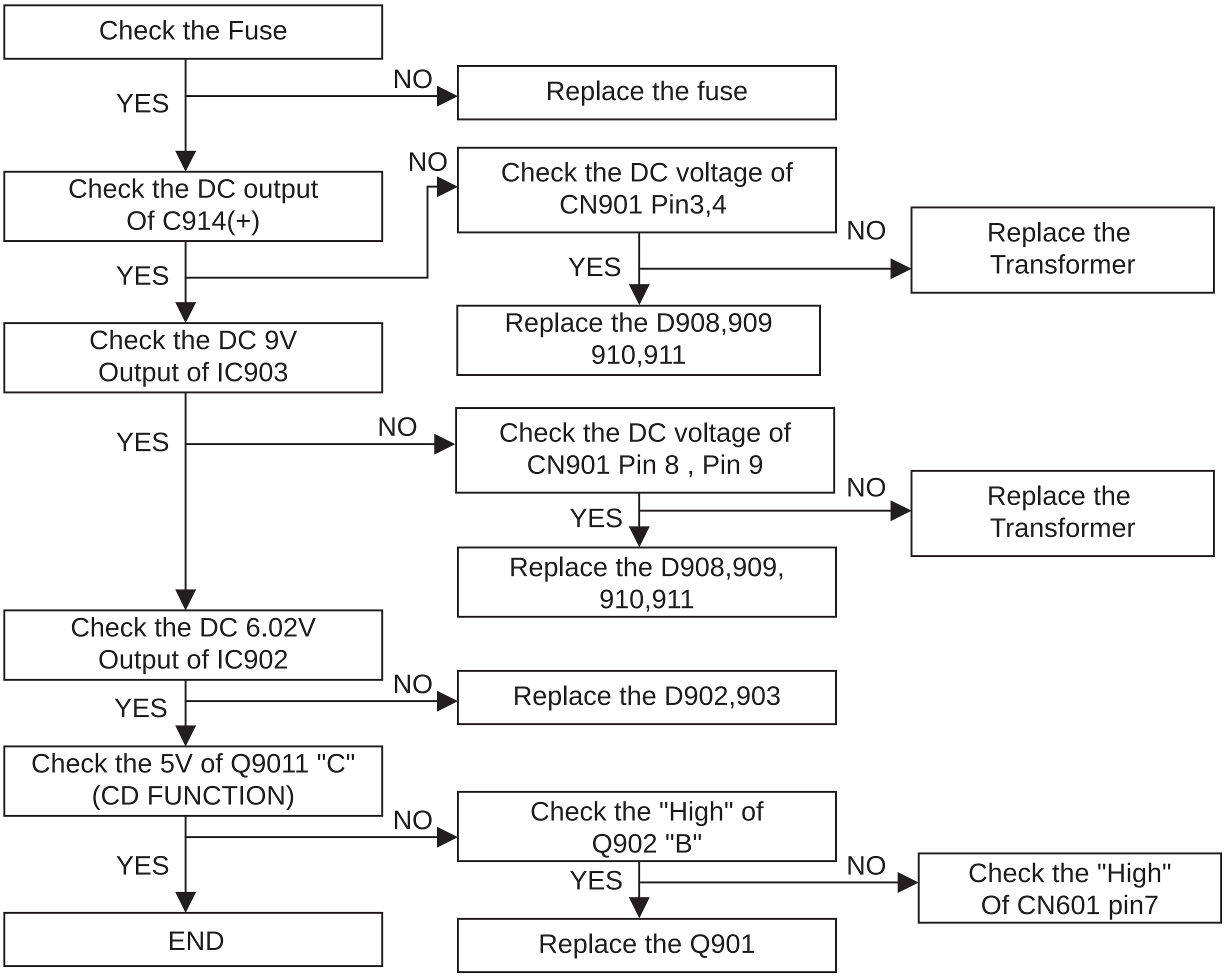
• AUDIO PART

P-SENS PART



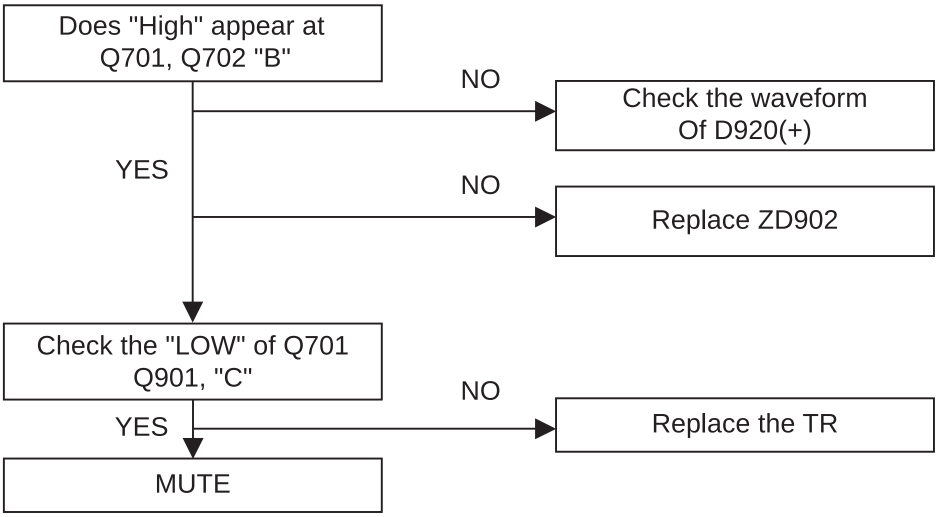
Does +5V appear at ZD902?
YES
NO
D920 , CN901 Check
IC300 PIN 26 Check

POWER CIRCUIT

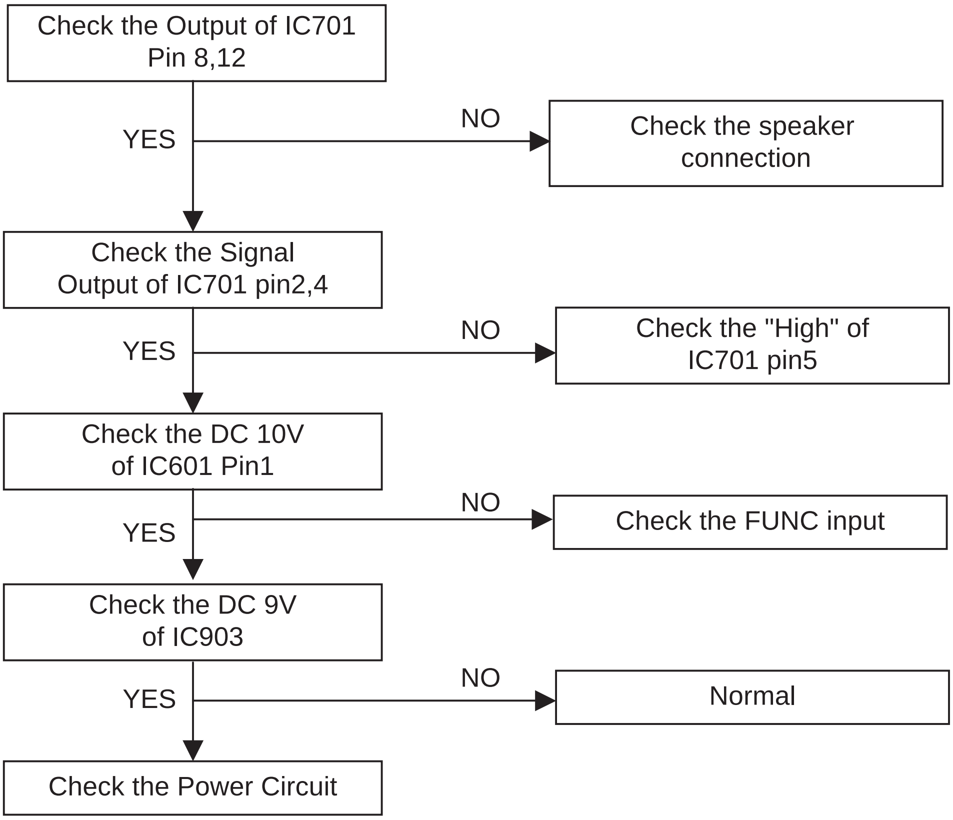


Check the Fuse
YES
NO
Replace the fuse
Check the DC output Of C914(+)
NO
Check the DC voltage of CN901 Pin3,4
YES
NO
Replace the Transformer
YES
Replace the D908,909 910,911
Check the DC 9V Output of IC903
YES
NO
Check the DC voltage of CN901 Pin 8 , Pin 9
NO
Replace the Transformer
YES
Replace the D908,909, 910,911
Check the DC 6.02V Output of IC902
YES
NO
Replace the D902,903
Check the 5V of Q9011 "C" (CD FUNCTION)
NO
Check the "High" of Q902 "B"
YES
NO
Check the "High" Of CN601 pin7
YES
Replace the Q901
END

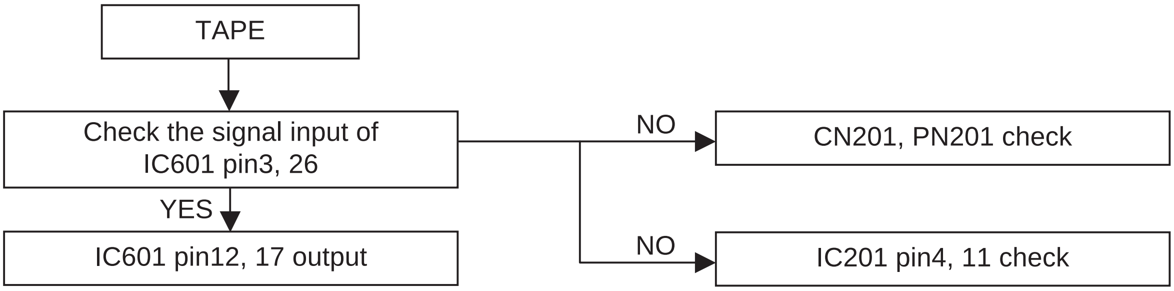
MUTING CIRCUIT(MUTE)

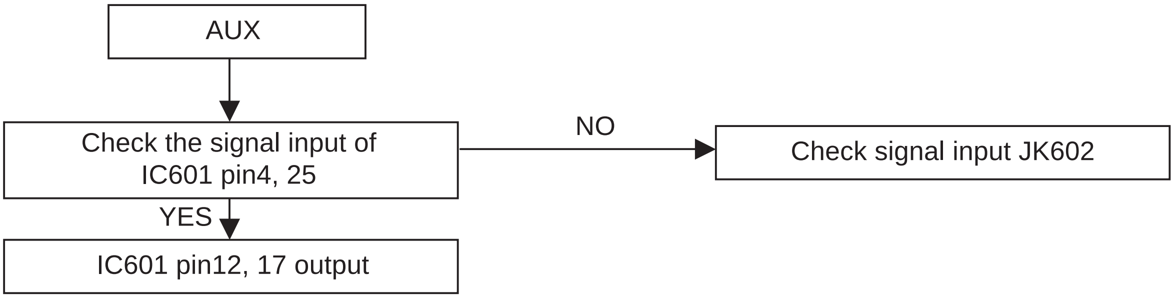

Does "High" appear at
Q701, Q702 "B"
NO
Check the waveform
Of D920(+)
YES
NO
Replace ZD902
Check the "LOW" of Q701
Q901, "C"
NO
YES
Replace the TR
MUTE

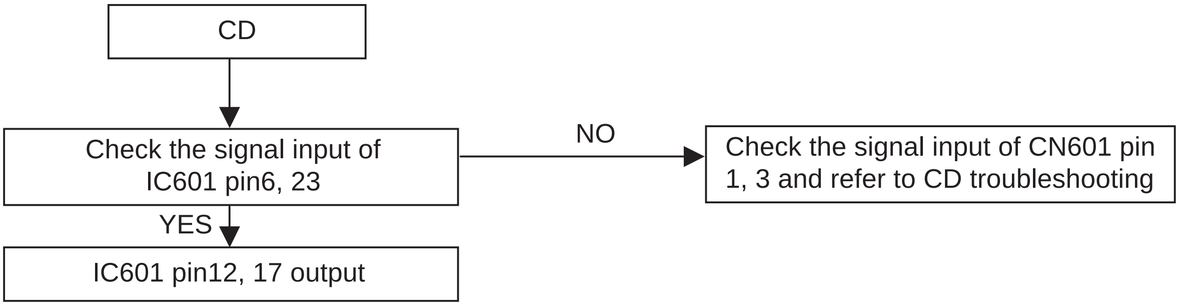
AUDIO ABNORMAL

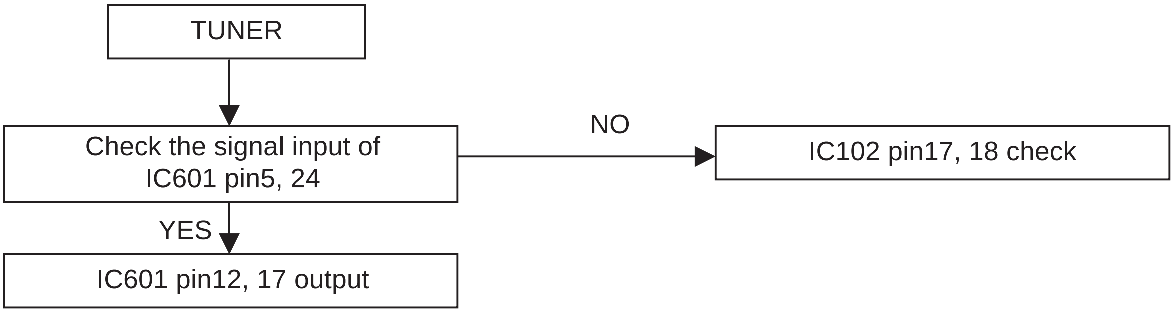

Check the Output of IC701
Pin 8,12
NO
YES
Check the speaker
connection
Check the Signal
Output of IC701 pin2,4
NO
YES
Check the "High" of
IC701 pin5
Check the DC 10V
of IC601 Pin1
NO
YES
Check the FUNC input
Check the DC 9V
of IC903
NO
YES
Normal
Check the Power Circuit

FUNCTION MODE AUDIO ABNORMAL

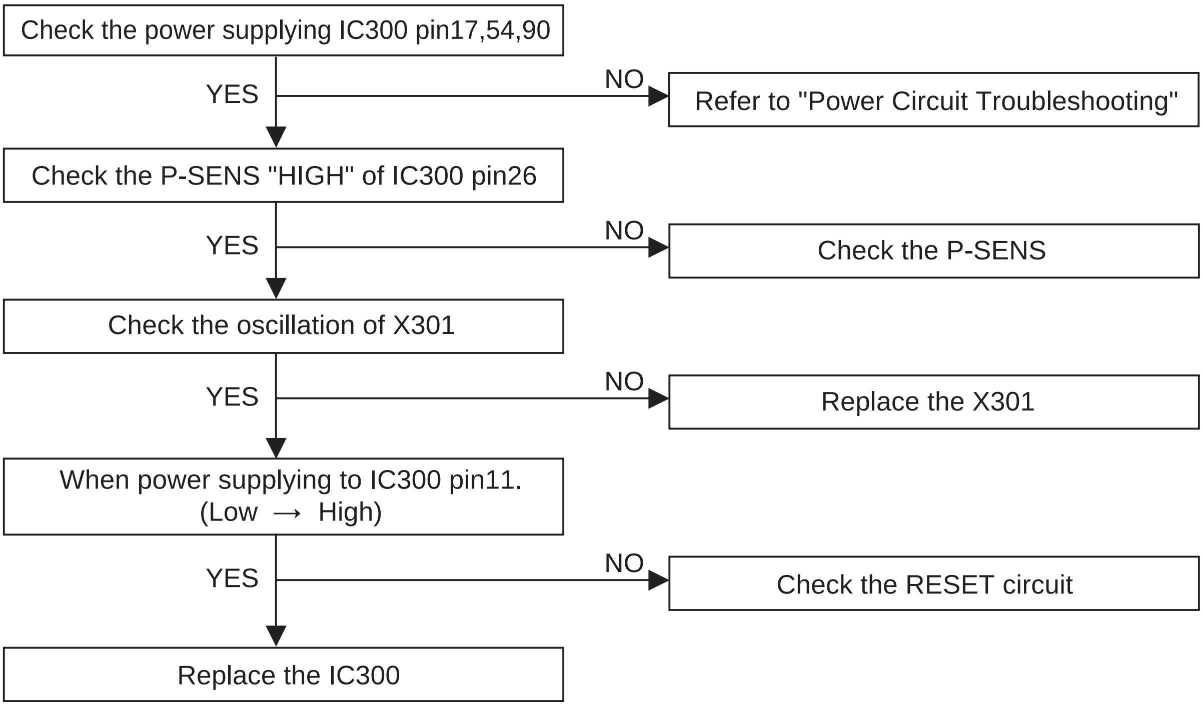

TAPE
Check the signal input of IC601 pin3, 26
NO
CN201, PN201 check
NO
IC201 pin4, 11 check
YES
IC601 pin12, 17 output


AUX
Check the signal input of IC601 pin4, 25
NO
Check signal input JK602
YES
IC601 pin12, 17 output

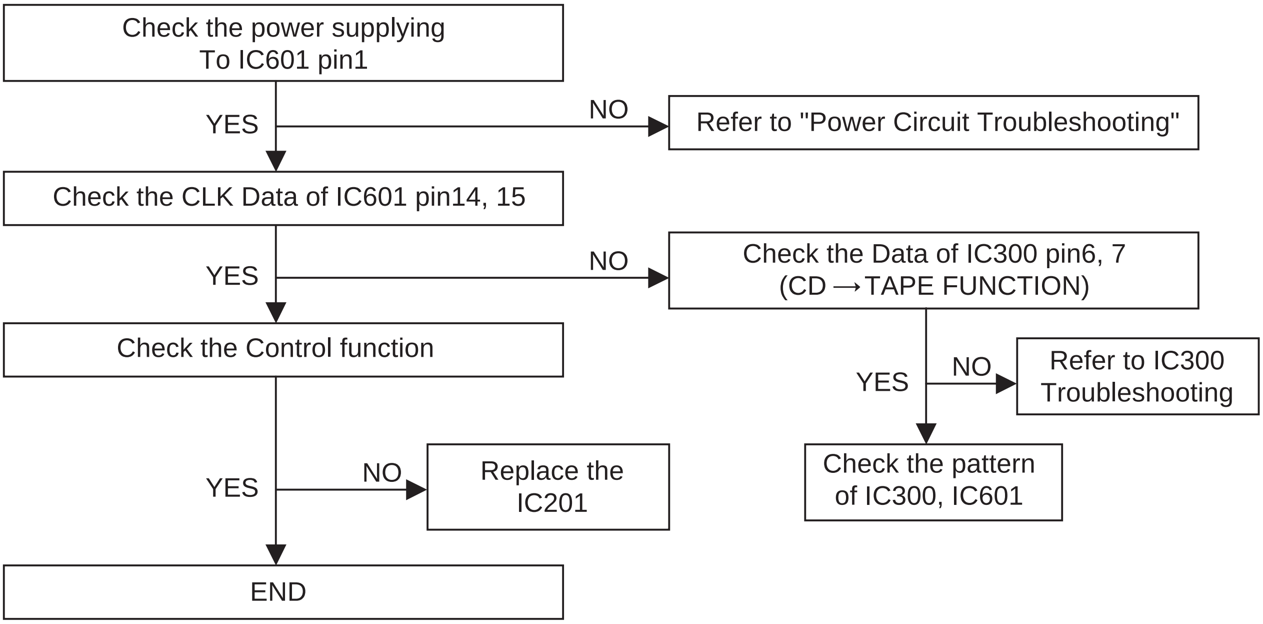

CD
Check the signal input of IC601 pin6, 23
NO
Check the signal input of CN601 pin 1, 3 and refer to CD troubleshooting
YES
IC601 pin12, 17 output


TUNER
Check the signal input of IC601 pin5, 24
NO
IC102 pin17, 18 check
YES
IC601 pin12, 17 output

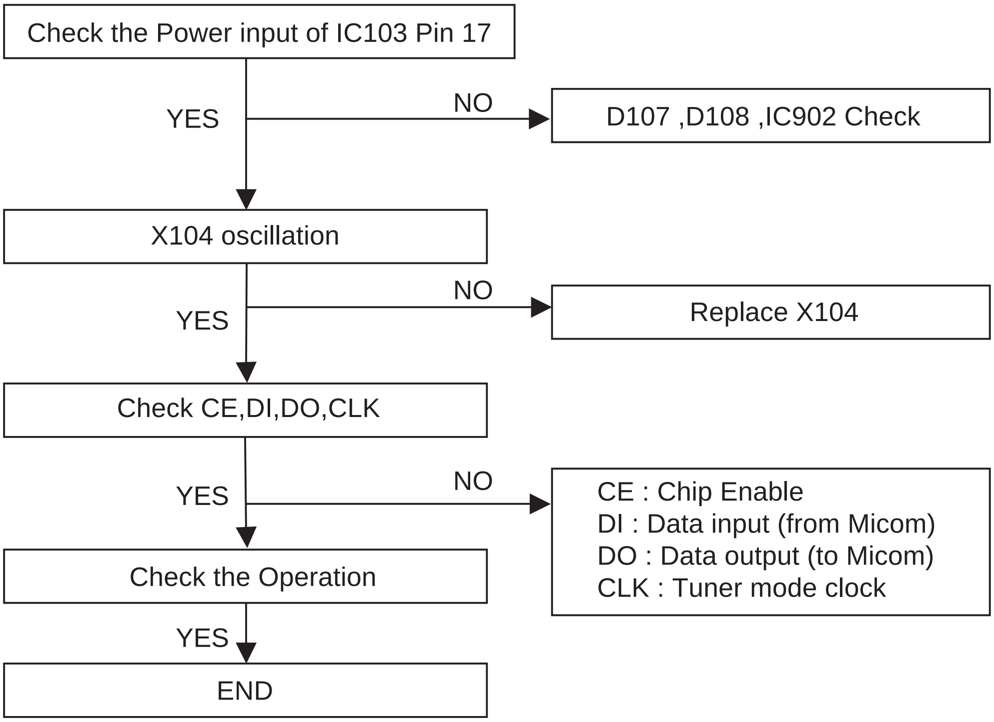
IC301 TROUBLESHOOTING


Check the power supplying IC300 pin17,54,90
YES
NO
Refer to "Power Circuit Troubleshooting"
Check the P-SENS "HIGH" of IC300 pin26
YES
NO
Check the P-SENS
Check the oscillation of X301
YES
NO
Replace the X301
When power supplying to IC300 pin11.
(Low → High)
YES
NO
Check the RESET circuit
Replace the IC300

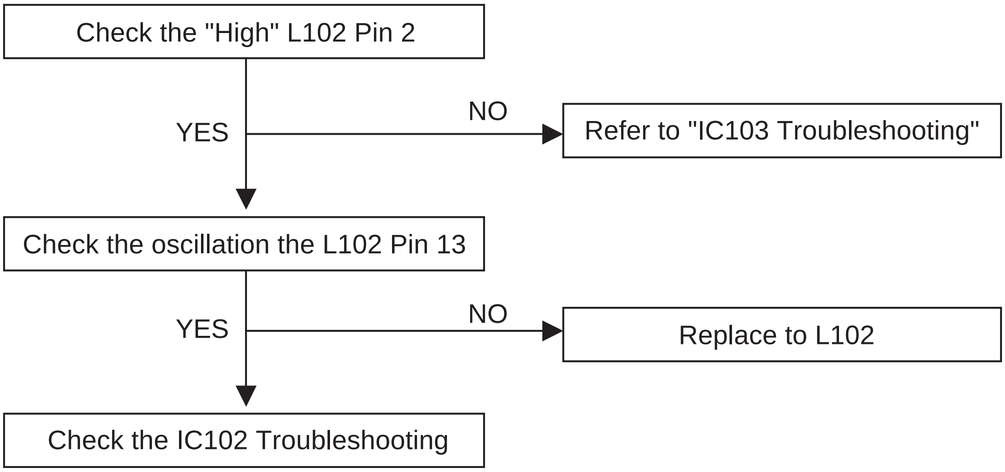
IC601 TROUBLESHOOTING


Check the power supplying
To IC601 pin1
YES
NO
Refer to "Power Circuit Troubleshooting"
Check the CLK Data of IC601 pin14, 15
YES
NO
Check the Data of IC300 pin6, 7
(CD → TAPE FUNCTION)
Check the Control function
YES
NO
Refer to IC300
Troubleshooting
Check the pattern
of IC300, IC601
YES
NO
Replace the
IC201
END

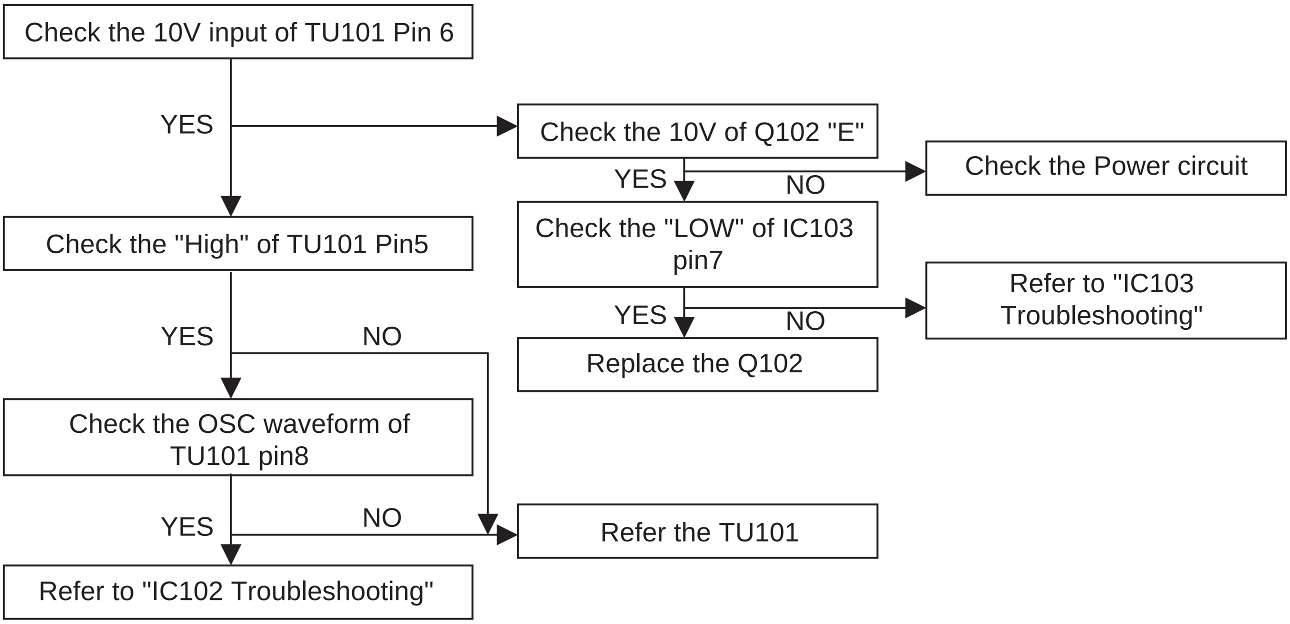
IC103 TROUBLESHOOTING


Check the Power input of IC103 Pin 17
YES
NO
D107 ,D108 ,IC902 Check
X104 oscillation
YES
NO
Replace X104
Check CE,DI,DO,CLK
YES
NO
CE : Chip Enable
DI : Data input (from Micom)
DO : Data output (to Micom)
CLK : Tuner mode clock
Check the Operation
YES
END

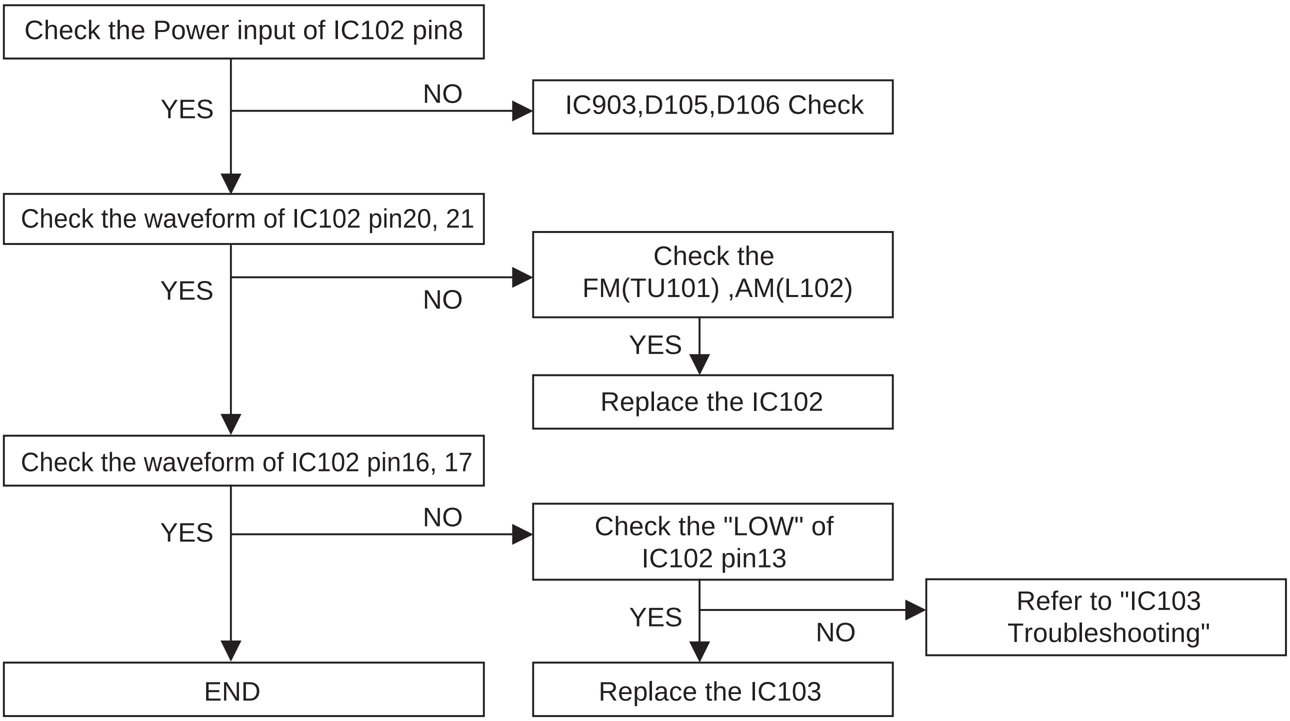
AM COIL TROUBLESHOOTING


Check the "High" L102 Pin 2
YES
NO
Refer to "IC103 Troubleshooting"
Check the oscillation the L102 Pin 13
YES
NO
Replace to L102
Check the IC102 Troubleshooting

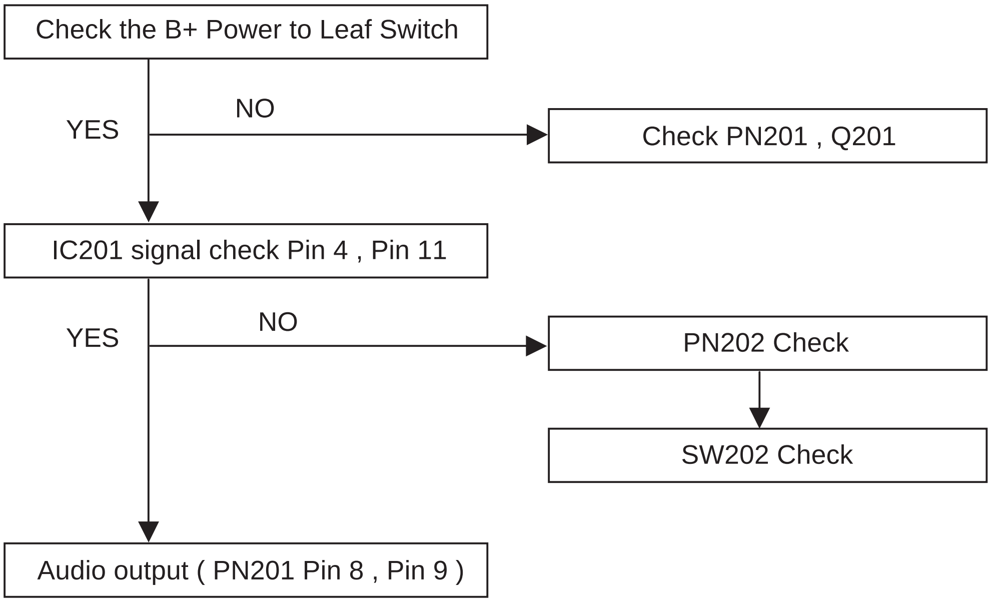
FM(TU101) TROUBLESHOOTING


Check the 10V input of TU101 Pin 6
YES
Check the 10V of Q102 "E"
YES
NO
Check the Power circuit
Check the "High" of TU101 Pin5
Check the "LOW" of IC103 pin7
YES
NO
Refer to "IC103 Troubleshooting"
YES
NO
Replace the Q102
Check the OSC waveform of TU101 pin8
YES
NO
Refer the TU101
Refer to "IC102 Troubleshooting"

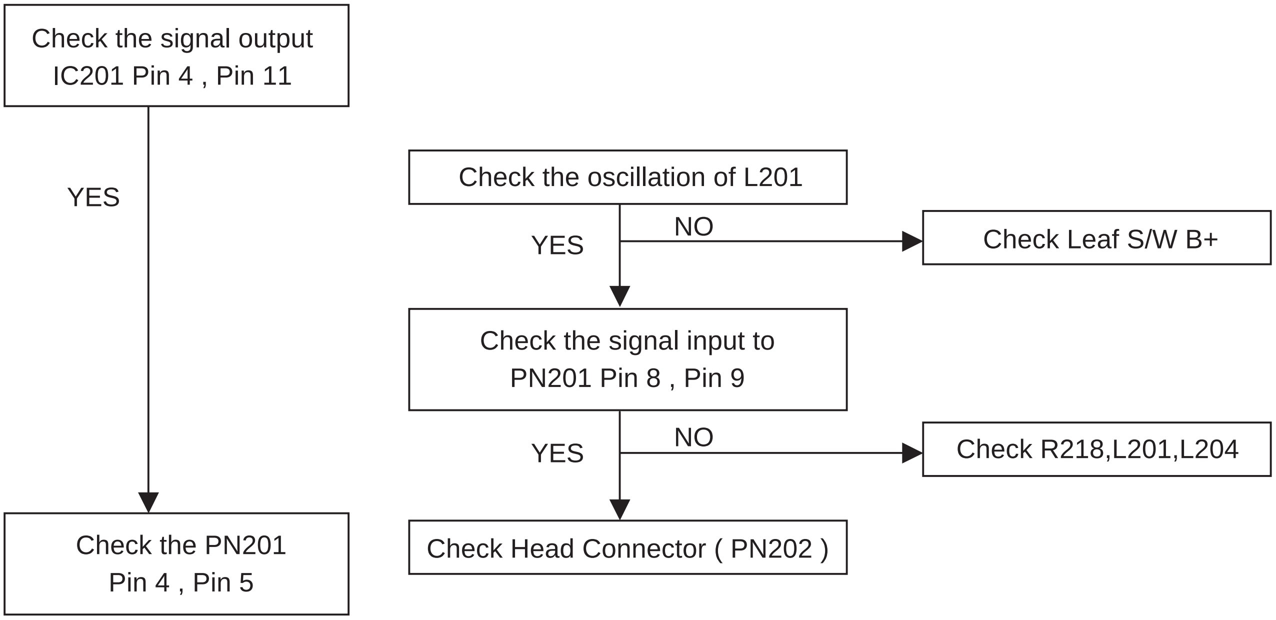
IC 102 TROUBLESHOOTING


Check the Power input of IC102 pin8
YES
NO
IC903,D105,D106 Check
Check the waveform of IC102 pin20, 21
YES
NO
Check the FM(TU101) ,AM(L102)
YES
Replace the IC102
Check the waveform of IC102 pin16, 17
YES
NO
Check the "LOW" of IC102 pin13
YES
NO
Refer to "IC103 Troubleshooting"
END
Replace the IC103

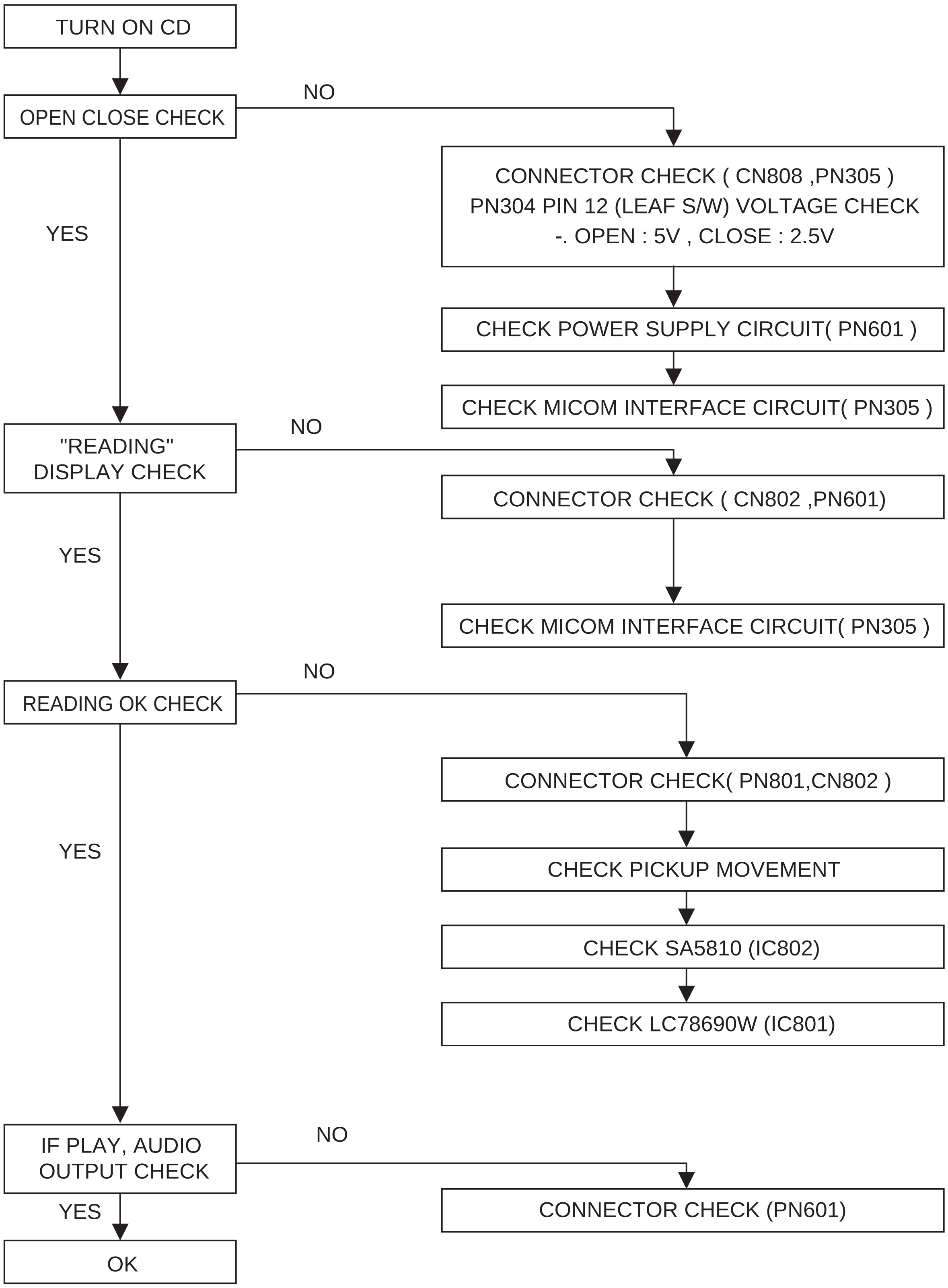
DECK PLAY


Check the B+ Power to Leaf Switch
YES
NO
Check PN201 , Q201
IC201 signal check Pin 4 , Pin 11
YES
NO
PN202 Check
SW202 Check
Audio output (PN201 Pin 8 , Pin 9)

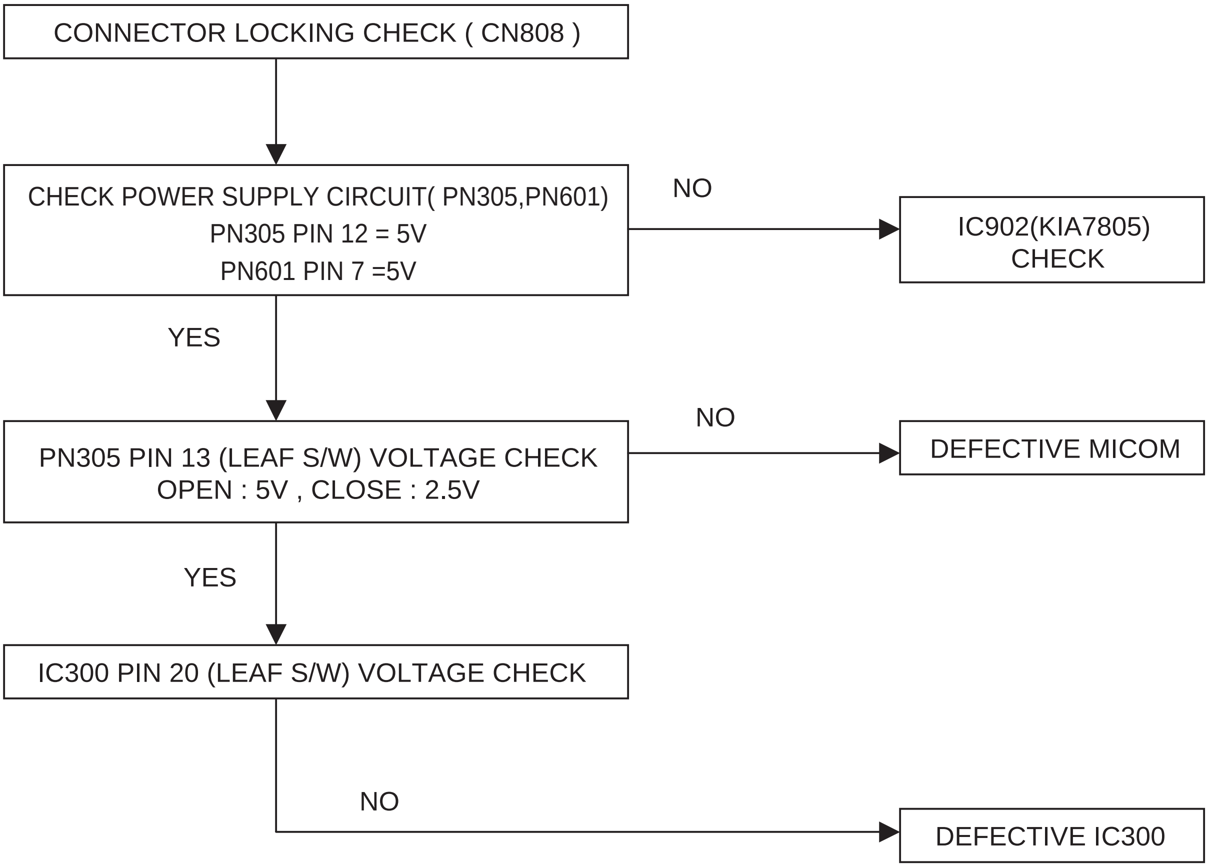
RECORDING


Check the signal output
IC201 Pin 4 , Pin 11
YES
Check the PN201
Pin 4 , Pin 5
Check the oscillation of L201
YES
NO
Check Leaf S/W B+
Check the signal input to
PN201 Pin 8 , Pin 9
YES
NO
Check R218,L201,L204
Check Head Connector (PN202)

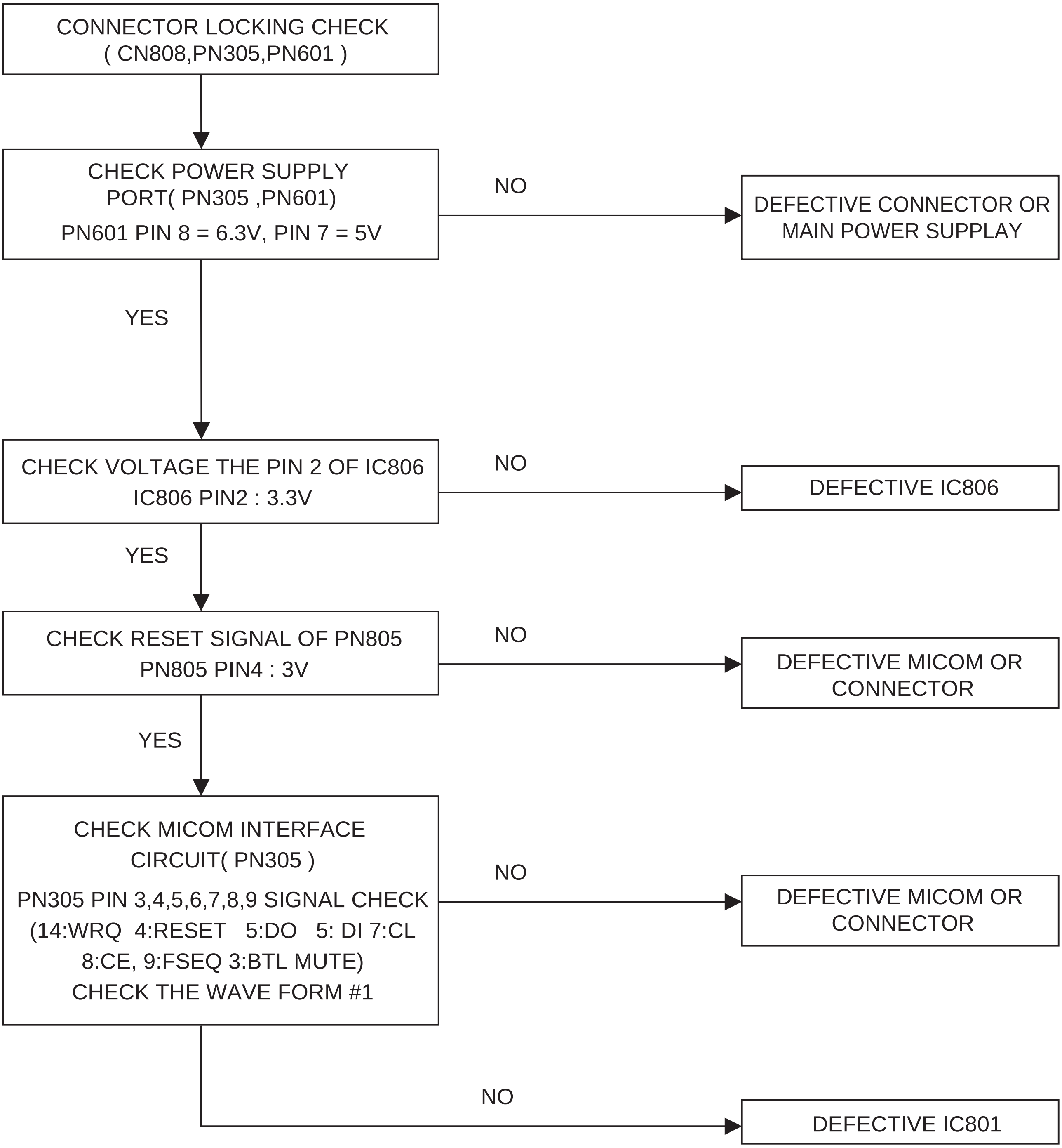
• CD PART


TURN ON CD
OPEN CLOSE CHECK
NO
CONNECTOR CHECK (CN808 ,PN305)
PN304 PIN 12 (LEAF S/W) VOLTAGE CHECK
-. OPEN : 5V , CLOSE : 2.5V
CHECK POWER SUPPLY CIRCUIT(PN601)
CHECK MICOM INTERFACE CIRCUIT(PN305)
YES
"READING"
DISPLAY CHECK
NO
CONNECTOR CHECK (CN802 ,PN601)
CHECK MICOM INTERFACE CIRCUIT(PN305)
YES
READING OK CHECK
NO
CONNECTOR CHECK(PN801,CN802)
CHECK PICKUP MOVEMENT
CHECK SA5810 (IC802)
CHECK LC78690W (IC801)
YES
IF PLAY, AUDIO
OUTPUT CHECK
NO
CONNECTOR CHECK (PN601)
YES
OK

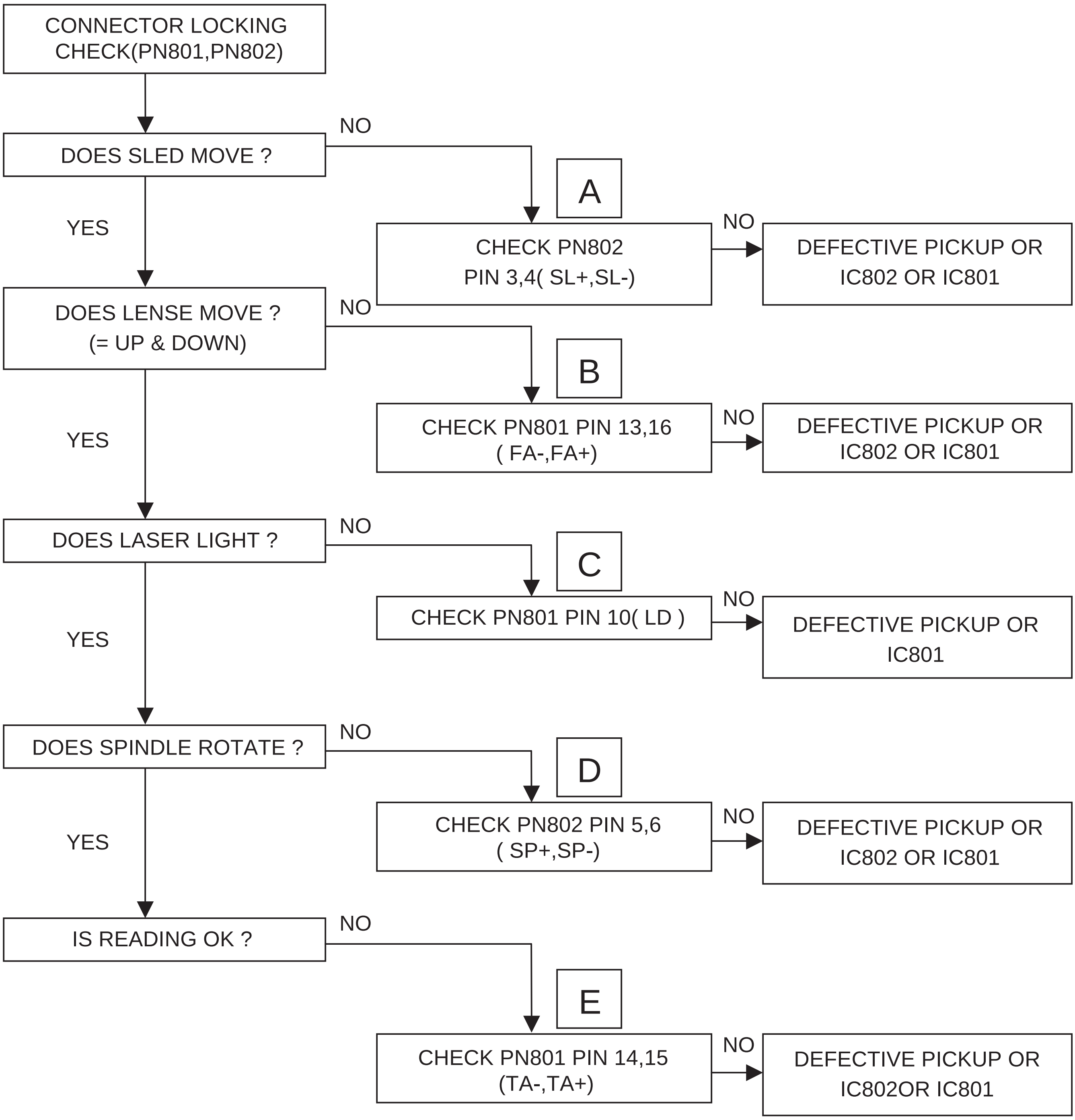
OPEN CLOSE NG


CONNECTOR LOCKING CHECK (CN808)
CHECK POWER SUPPLY CIRCUIT(PN305,PN601)
PN305 PIN 12 = 5V
PN601 PIN 7 =5V
NO
IC902(KIA7805)
CHECK
YES
PN305 PIN 13 (LEAF S/W) VOLTAGE CHECK
OPEN : 5V , CLOSE : 2.5V
NO
DEFECTIVE MICOM
YES
IC300 PIN 20 (LEAF S/W) VOLTAGE CHECK
NO
DEFECTIVE IC300

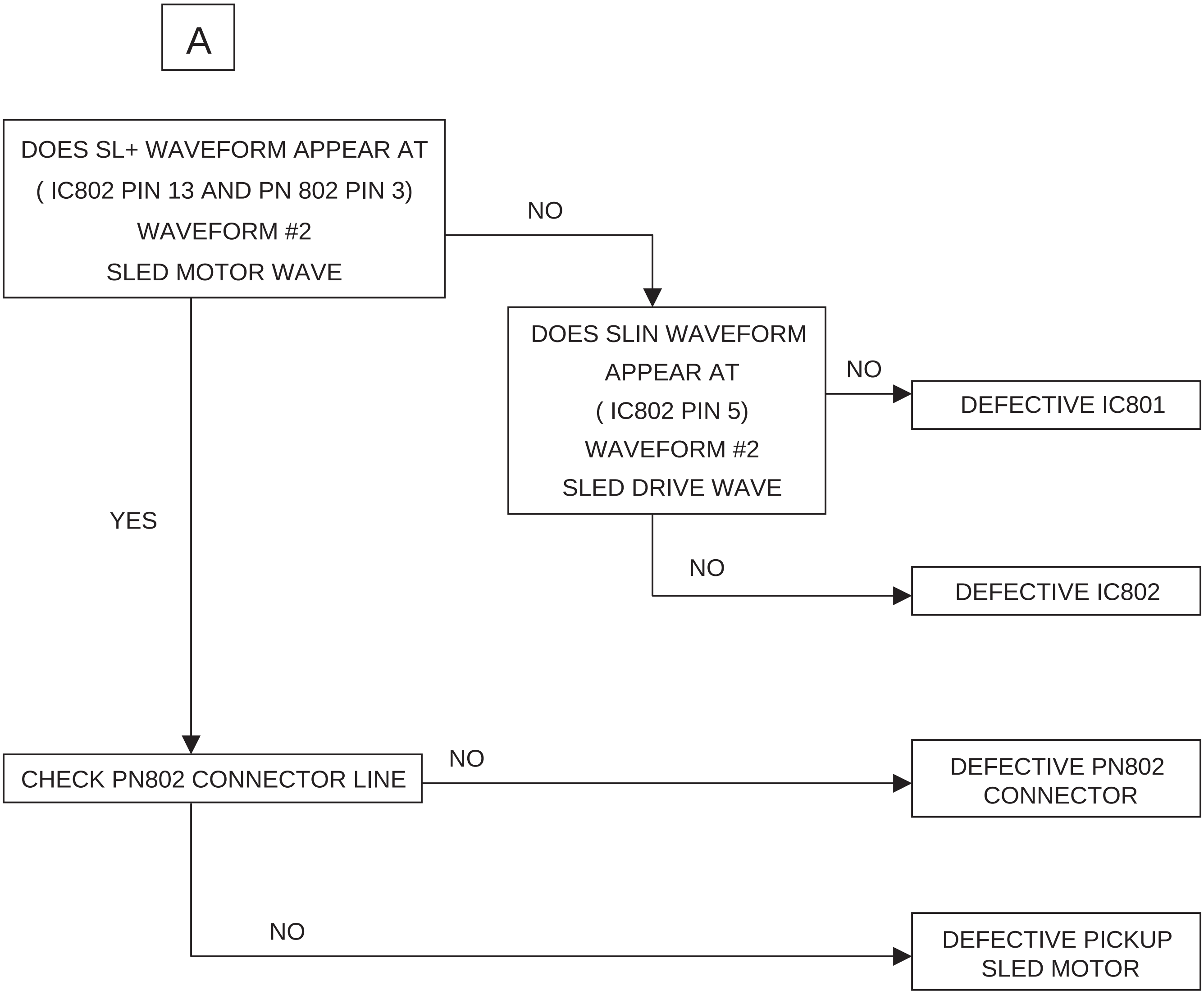
"READING" DISPLAY CHECK (= ONLY "CD" DISPLAY)


CONNECTOR LOCKING CHECK
(CN808,PN305,PN601)
CHECK POWER SUPPLY
PORT(PN305 ,PN601)
PN601 PIN 8 = 6.3V, PIN 7 = 5V
NO
DEFECTIVE CONNECTOR OR
MAIN POWER SUPPLAY
YES
CHECK VOLTAGE THE PIN 2 OF IC806
IC806 PIN2 : 3.3V
NO
DEFECTIVE IC806
YES
CHECK RESET SIGNAL OF PN805
PN805 PIN4 : 3V
NO
DEFECTIVE MICOM OR
CONNECTOR
YES
CHECK MICOM INTERFACE
CIRCUIT(PN305)
PN305 PIN 3,4,5,6,7,8,9 SIGNAL CHECK
(14:WRQ 4:RESET 5:DO 5: DI 7:CL
8:CE, 9:FSEQ 3:BTL MUTE)
CHECK THE WAVE FORM #1
NO
DEFECTIVE MICOM OR
CONNECTOR
NO
DEFECTIVE IC801

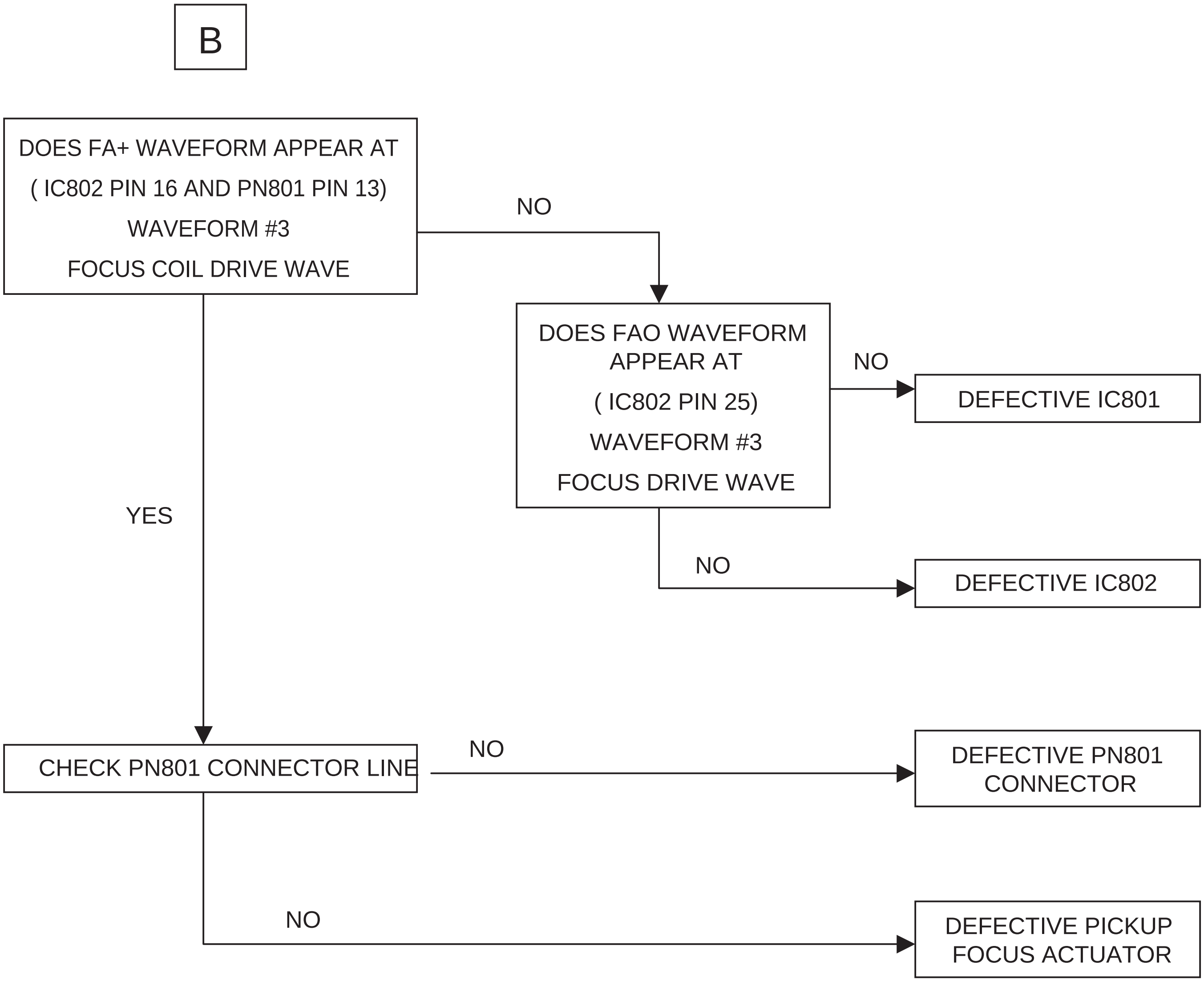
READING OK CHECK
(= "NO DISC" DISPLAY)


CONNECTOR LOCKING CHECK(PN801,PN802)
DOES SLED MOVE ?
NO
A
CHECK PN802 PIN 3,4(SL+,SL-)
NO
DEFECTIVE PICKUP OR IC802 OR IC801
YES
DOES LENSE MOVE ? (= UP & DOWN)
NO
B
CHECK PN801 PIN 13,16 (FA-,FA+)
NO
DEFECTIVE PICKUP OR IC802 OR IC801
YES
DOES LASER LIGHT ?
NO
C
CHECK PN801 PIN 10(LD)
NO
DEFECTIVE PICKUP OR IC801
YES
DOES SPINDLE ROTATE ?
NO
D
CHECK PN802 PIN 5,6 (SP+,SP-)
NO
DEFECTIVE PICKUP OR IC802 OR IC801
YES
IS READING OK ?
NO
E
CHECK PN801 PIN 14,15 (TA-,TA+)
NO
DEFECTIVE PICKUP OR IC802OR IC801

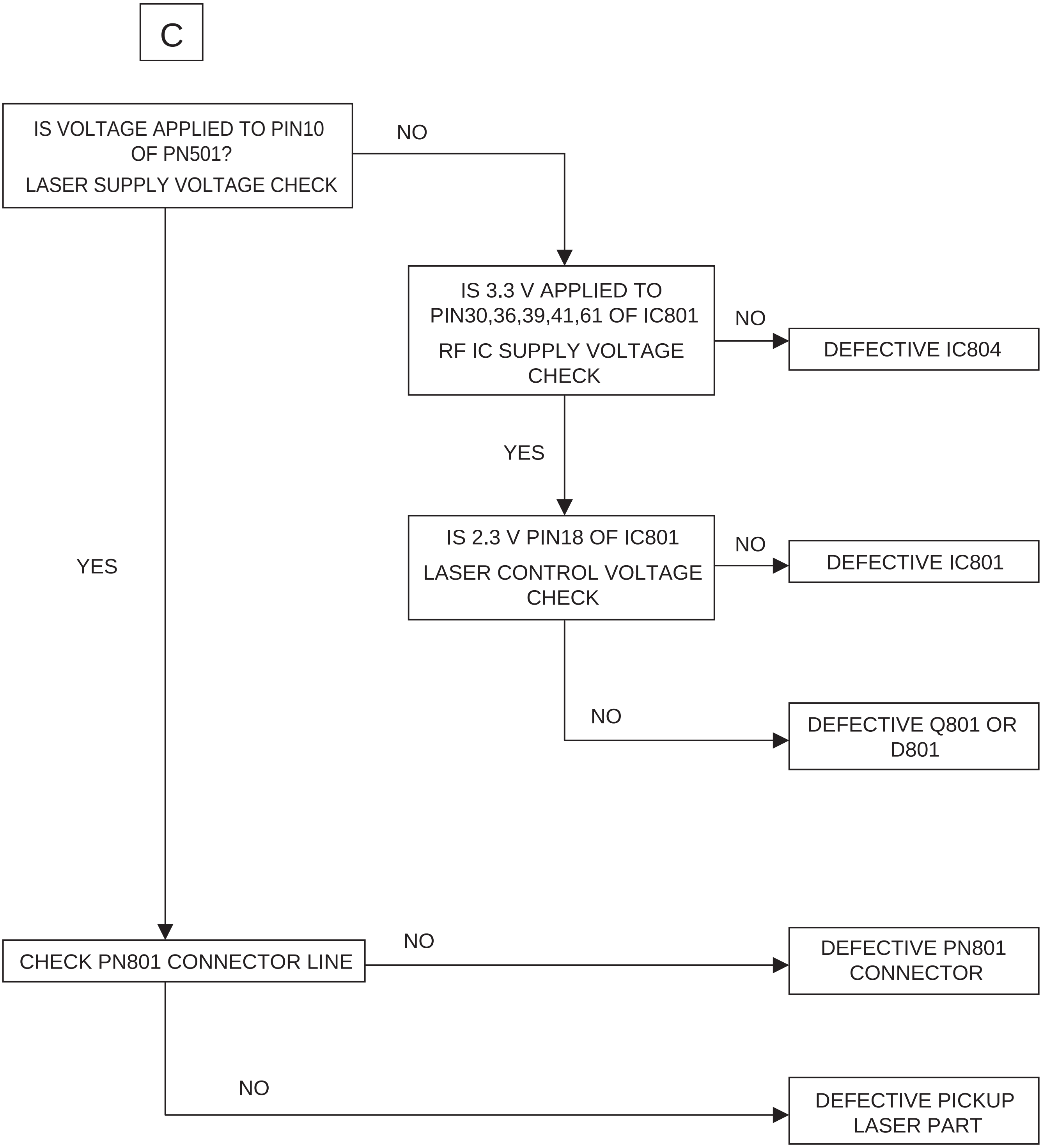
READING OK CHECK #A
(= "NO DISC" DISPLAY)


A
DOES SL+ WAVEFORM APPEAR AT
(IC802 PIN 13 AND PN 802 PIN 3)
WAVEFORM #2
SLED MOTOR WAVE
NO
DOES SLIN WAVEFORM
APPEAR AT
(IC802 PIN 5)
WAVEFORM #2
SLED DRIVE WAVE
NO
DEFECTIVE IC801
YES
NO
DEFECTIVE IC802
CHECK PN802 CONNECTOR LINE
NO
DEFECTIVE PN802
CONNECTOR
NO
DEFECTIVE PICKUP
SLED MOTOR

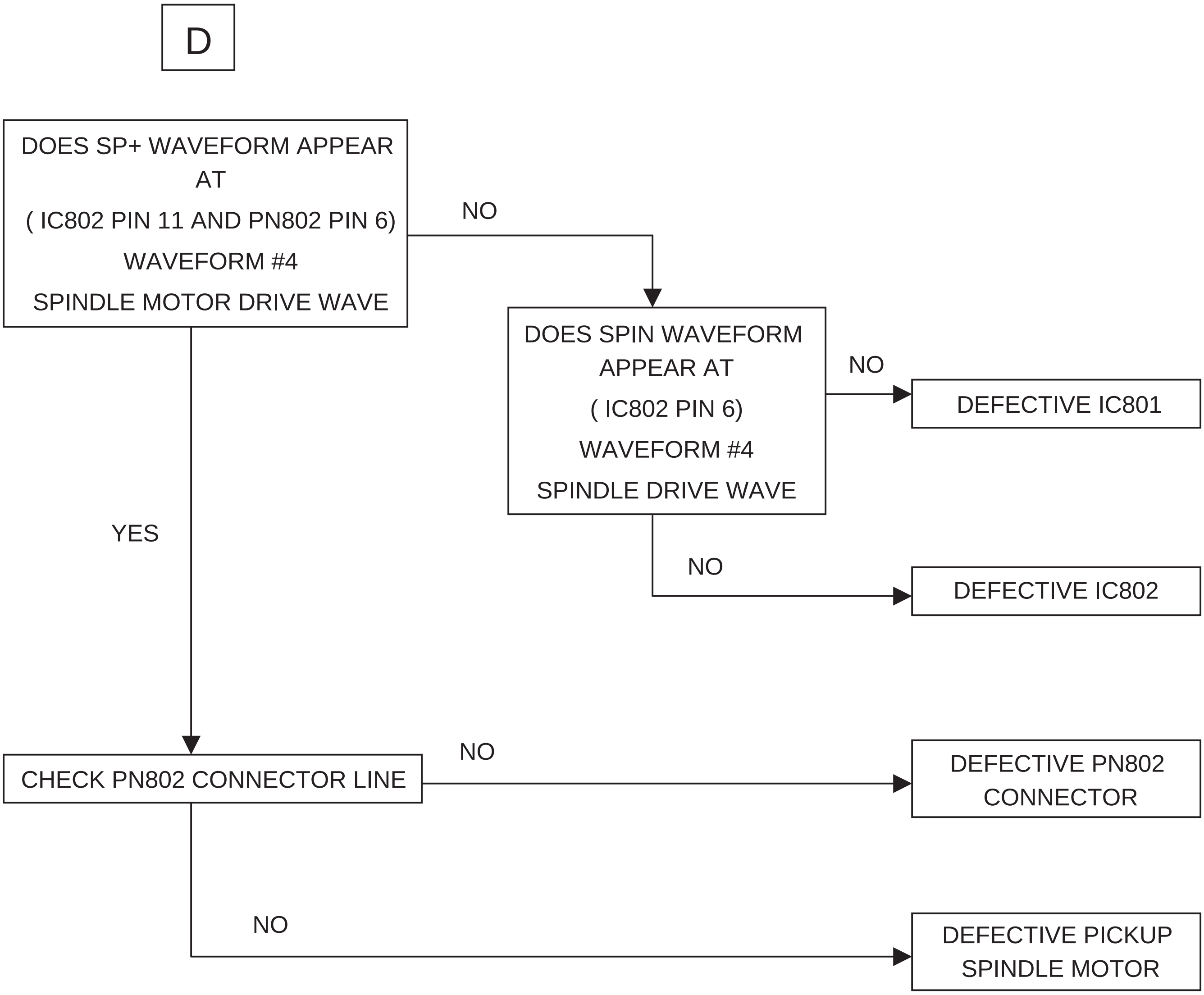
READING OK CHECK #B
(= "NO DISC" DISPLAY)


B
DOES FA+ WAVEFORM APPEAR AT
(IC802 PIN 16 AND PN801 PIN 13)
WAVEFORM #3
FOCUS COIL DRIVE WAVE
NO
DOES FAO WAVEFORM APPEAR AT
(IC802 PIN 25)
WAVEFORM #3
FOCUS DRIVE WAVE
NO
DEFECTIVE IC801
YES
NO
DEFECTIVE IC802
CHECK PN801 CONNECTOR LINE
NO
DEFECTIVE PN801 CONNECTOR
NO
DEFECTIVE PICKUP FOCUS ACTUATOR

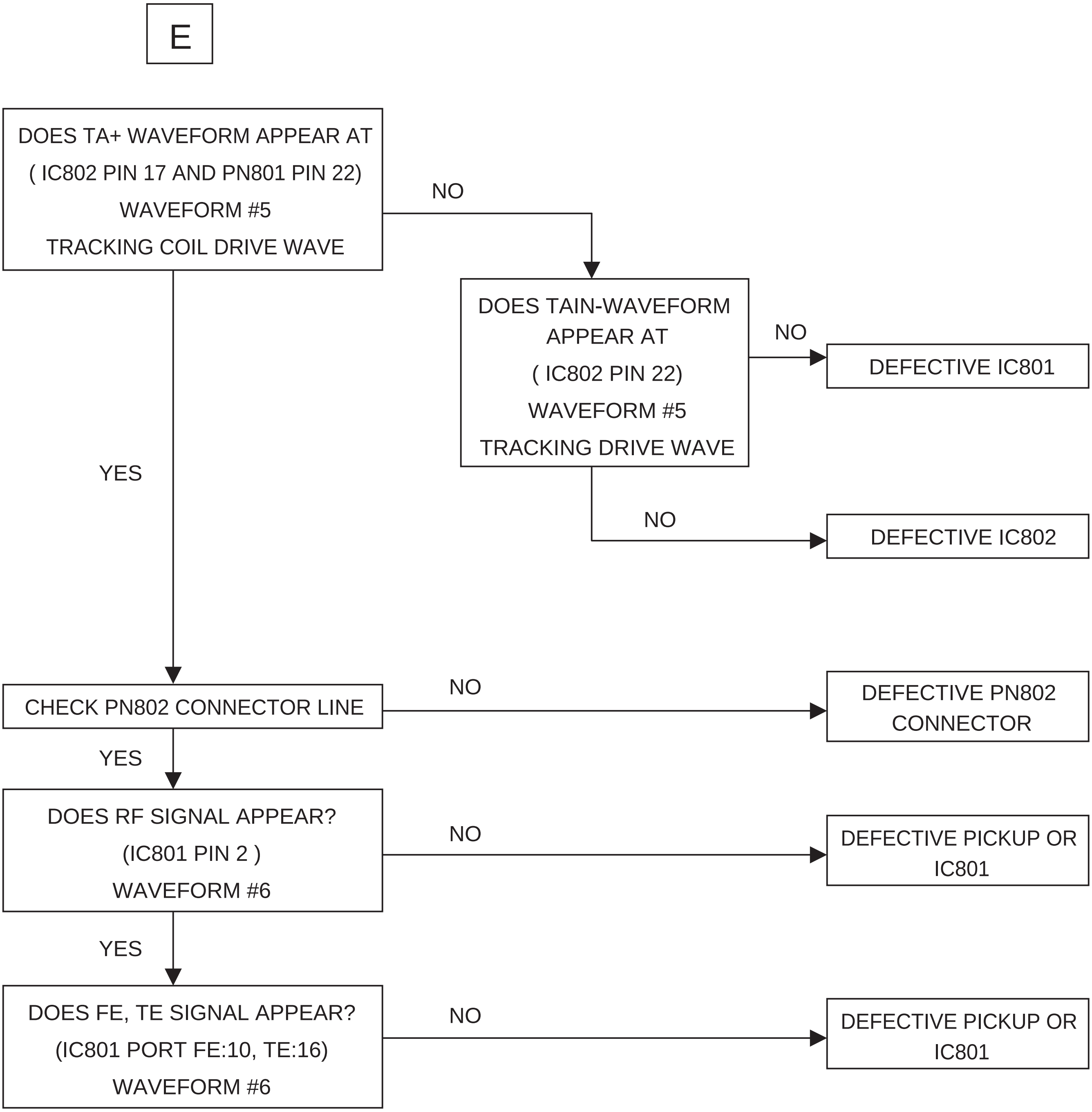
READING OK CHECK #C
(= "NO DISC" DISPLAY)


C
IS VOLTAGE APPLIED TO PIN10 OF PN501?
LASER SUPPLY VOLTAGE CHECK
NO
YES
IS 3.3 V APPLIED TO PIN30,36,39,41,61 OF IC801
RF IC SUPPLY VOLTAGE CHECK
NO
DEFECTIVE IC804
YES
IS 2.3 V PIN18 OF IC801
LASER CONTROL VOLTAGE CHECK
NO
DEFECTIVE IC801
NO
DEFECTIVE Q801 OR D801
CHECK PN801 CONNECTOR LINE
NO
DEFECTIVE PN801 CONNECTOR
NO
DEFECTIVE PICKUP LASER PART

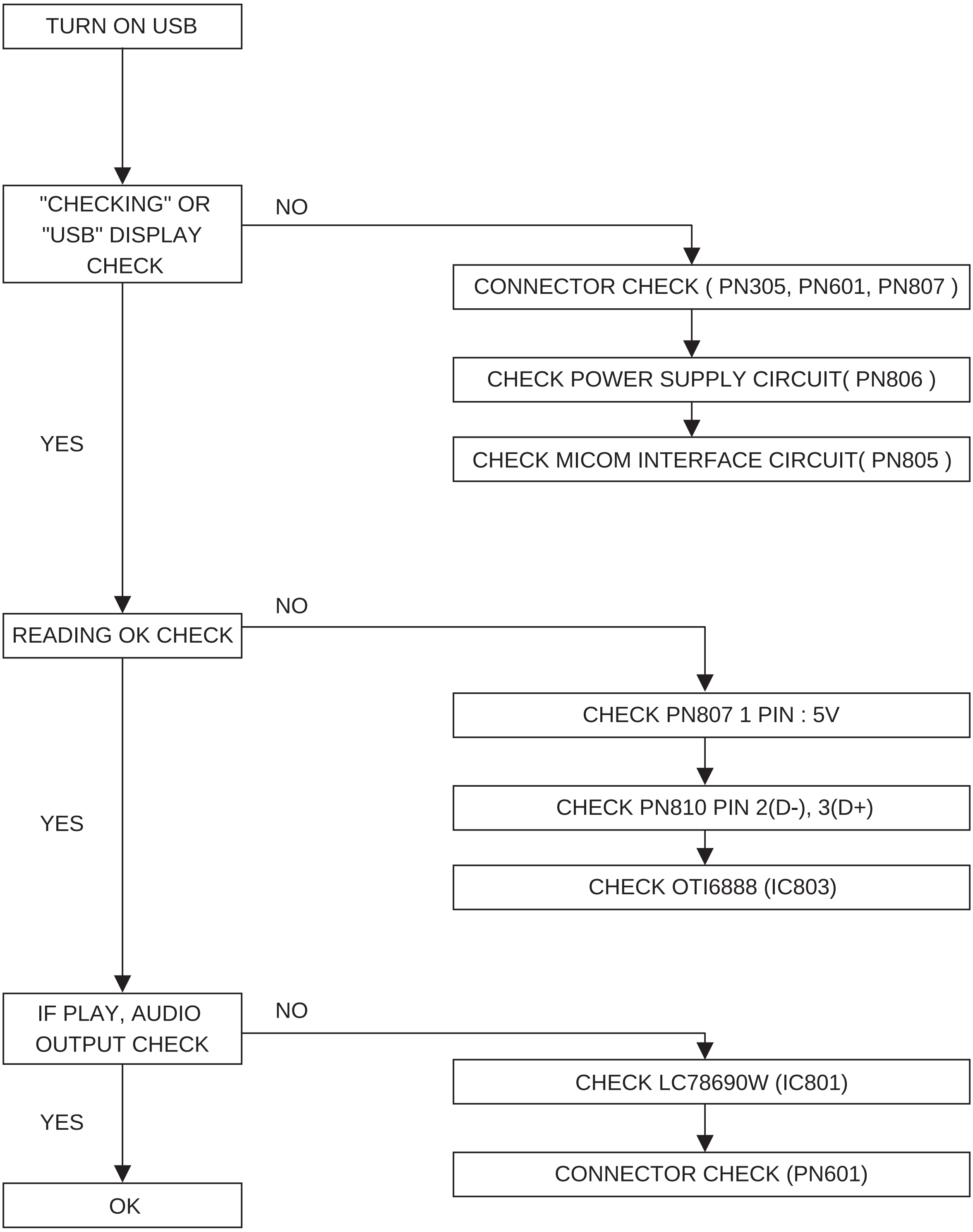
READING OK CHECK #D
(= "NO DISC" DISPLAY)


D
DOES SP+ WAVEFORM APPEAR AT
(IC802 PIN 11 AND PN802 PIN 6)
WAVEFORM #4
SPINDLE MOTOR DRIVE WAVE
NO
DOES SPIN WAVEFORM APPEAR AT
(IC802 PIN 6)
WAVEFORM #4
SPINDLE DRIVE WAVE
NO
DEFECTIVE IC801
YES
NO
DEFECTIVE IC802
CHECK PN802 CONNECTOR LINE
NO
DEFECTIVE PN802 CONNECTOR
NO
DEFECTIVE PICKUP SPINDLE MOTOR

READING OK CHECK #E
(= "NO DISC" DISPLAY)

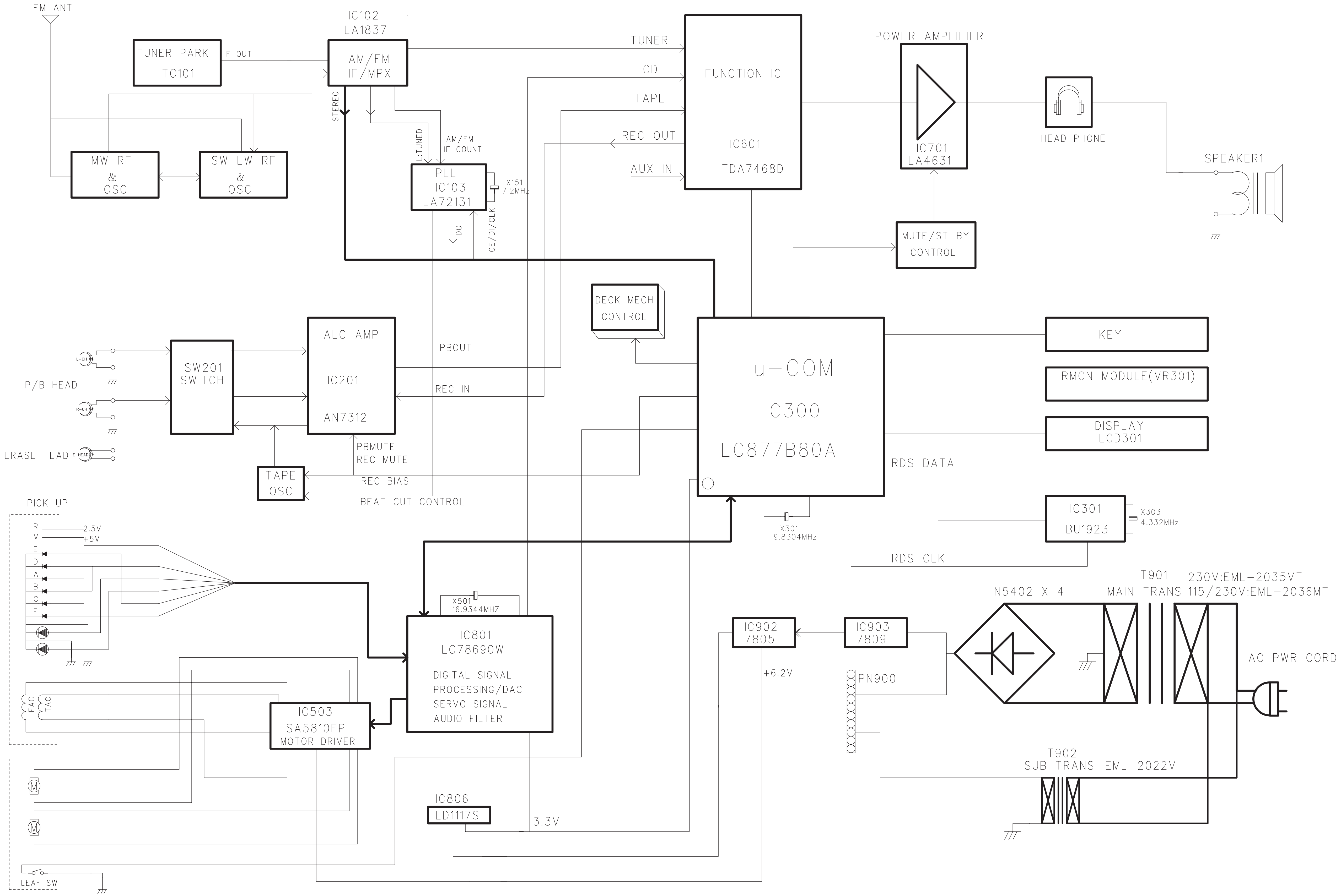

E
DOES TA+ WAVEFORM APPEAR AT
(IC802 PIN 17 AND PN801 PIN 22)
WAVEFORM #5
TRACKING COIL DRIVE WAVE
NO
DOES TAIN-WAVEFORM APPEAR AT
(IC802 PIN 22)
WAVEFORM #5
TRACKING DRIVE WAVE
NO
DEFECTIVE IC801
NO
DEFECTIVE IC802
YES
CHECK PN802 CONNECTOR LINE
NO
DEFECTIVE PN802 CONNECTOR
YES
DOES RF SIGNAL APPEAR?
(IC801 PIN 2)
WAVEFORM #6
NO
DEFECTIVE PICKUP OR IC801
YES
DOES FE, TE SIGNAL APPEAR?
(IC801 PORT FE:10, TE:16)
WAVEFORM #6
NO
DEFECTIVE PICKUP OR IC801

• USB PART


TURN ON USB
"CHECKING" OR "USB" DISPLAY CHECK
NO
CONNECTOR CHECK (PN305, PN601, PN807)
CHECK POWER SUPPLY CIRCUIT(PN806)
CHECK MICOM INTERFACE CIRCUIT(PN805)
YES
READING OK CHECK
NO
CHECK PN807 1 PIN : 5V
CHECK PN810 PIN 2(D-), 3(D+)
CHECK OTI6888 (IC803)
YES
IF PLAY, AUDIO OUTPUT CHECK
NO
CHECK LC78690W (IC801)
CONNECTOR CHECK (PN601)
YES
OK

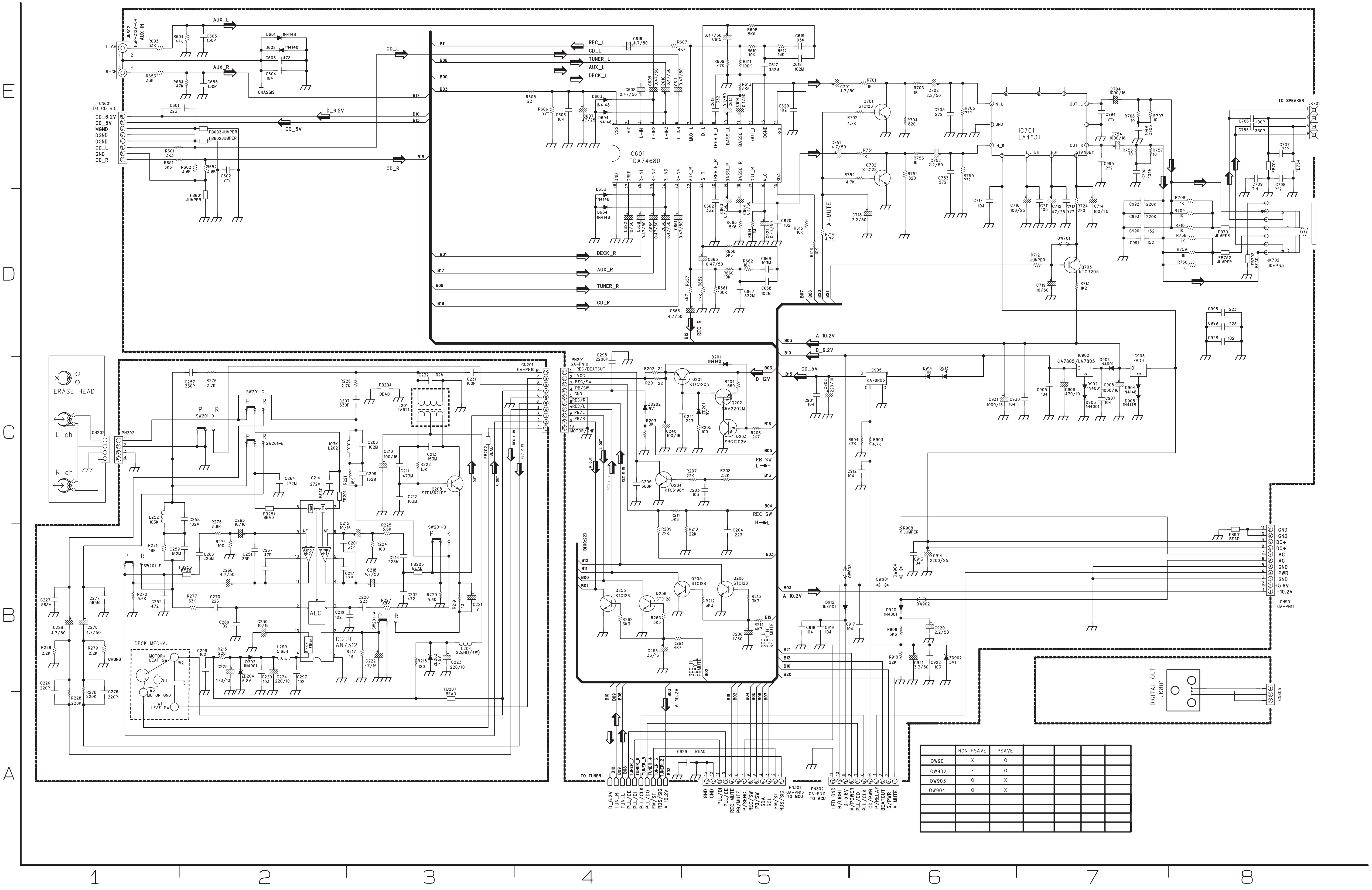
MEMO

❑ BLOCK DIAGRAM


FM ANT
TUNER PARK
TC101
IF OUT
IC102
LA1837
AM/FM
IF/MPX
STEREO
L:TUNED
AM/FM
IF COUNT
MW RF
&
OSC
SW LW RF
&
OSC
PLL
IC103
LA72131
X151
7.2MHz
DO
CE/DI/CLK
TUNER
CD
TAPE
REC OUT
AUX IN
FUNCTION IC
IC601
TDA7468D
POWER AMPLIFIER
IC701
LA4631
MUTE/ST-BY
CONTROL
HEAD PHONE
SPEAKER1
DECK MECH
CONTROL
u-COM
IC300
LC877B80A
KEY
RMCN MODULE(VR301)
DISPLAY
LCD301
RDS DATA
IC301
BU1923
X303
4.332MHz
X301
9.8304MHz
RDS CLK
L-CH
R-CH
P/B HEAD
ERASE HEAD
E-HEAD
SW201
SWITCH
ALC AMP
IC201
AN7312
PBOUT
REC IN
PBMUTE
REC MUTE
TAPE
OSC
REC BIAS
BEAT CUT CONTROL
PICK UP
R
V
E
D
A
B
C
F
2.5V
+5V
FAC
TAC
X501
16.9344MHZ
IC801
LC78690W
DIGITAL SIGNAL
PROCESSING/DAC
SERVO SIGNAL
AUDIO FILTER
IC503
SA5810FP
MOTOR DRIVER
M
M
LEAF SW
IC806
LD1117S
3.3V
IC902
7805
+6.2V
IC903
7809
PN900
IN5402 X 4
T901
MAIN TRANS
230V:EML-2035VT
115/230V:EML-2036MT
AC PWR CORD
T902
SUB TRANS EML-2022V

❑ SCHEMATIC DIAGRAMS

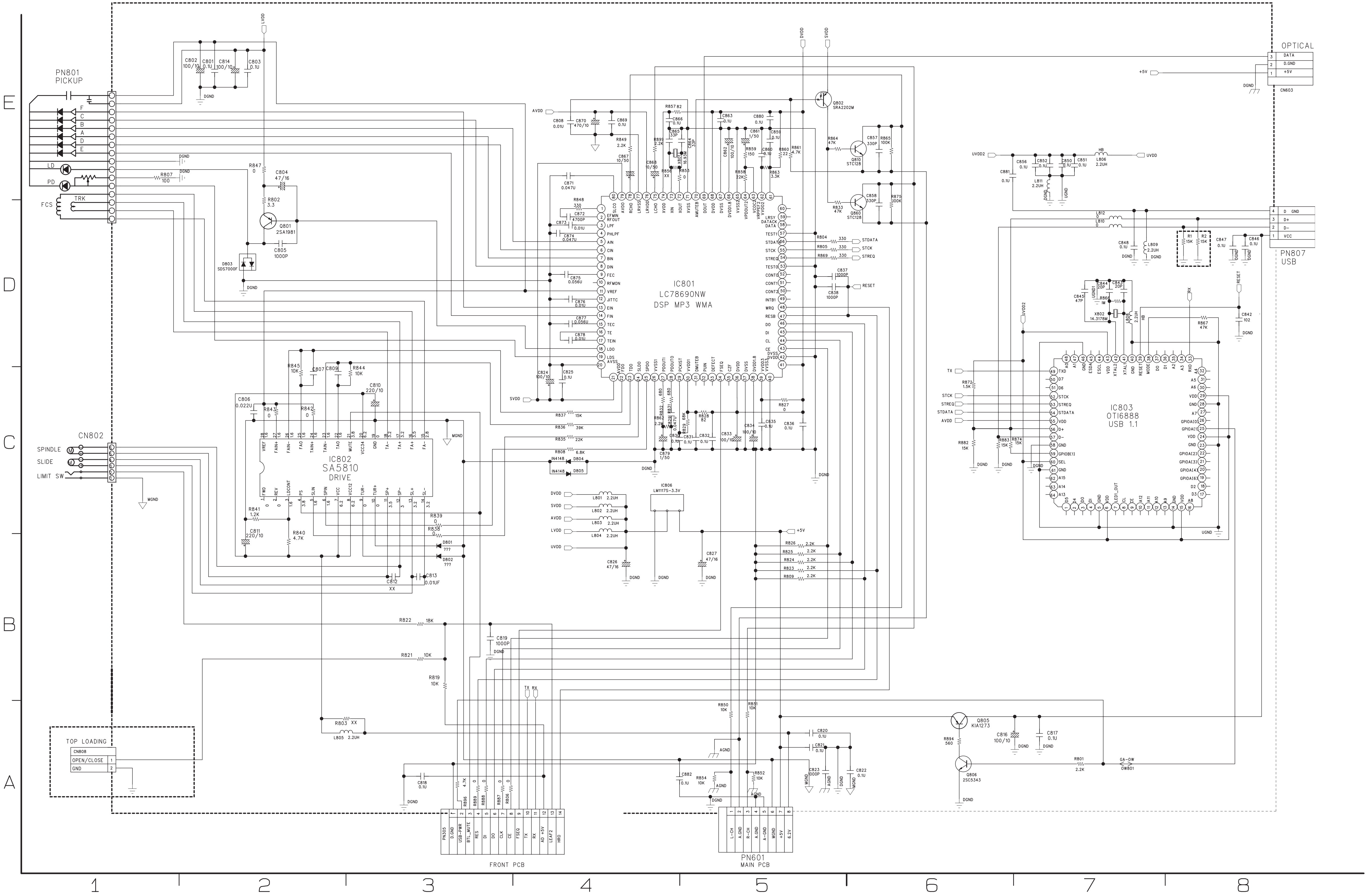
• MAIN & DECK SCHEMATIC DIAGRAM



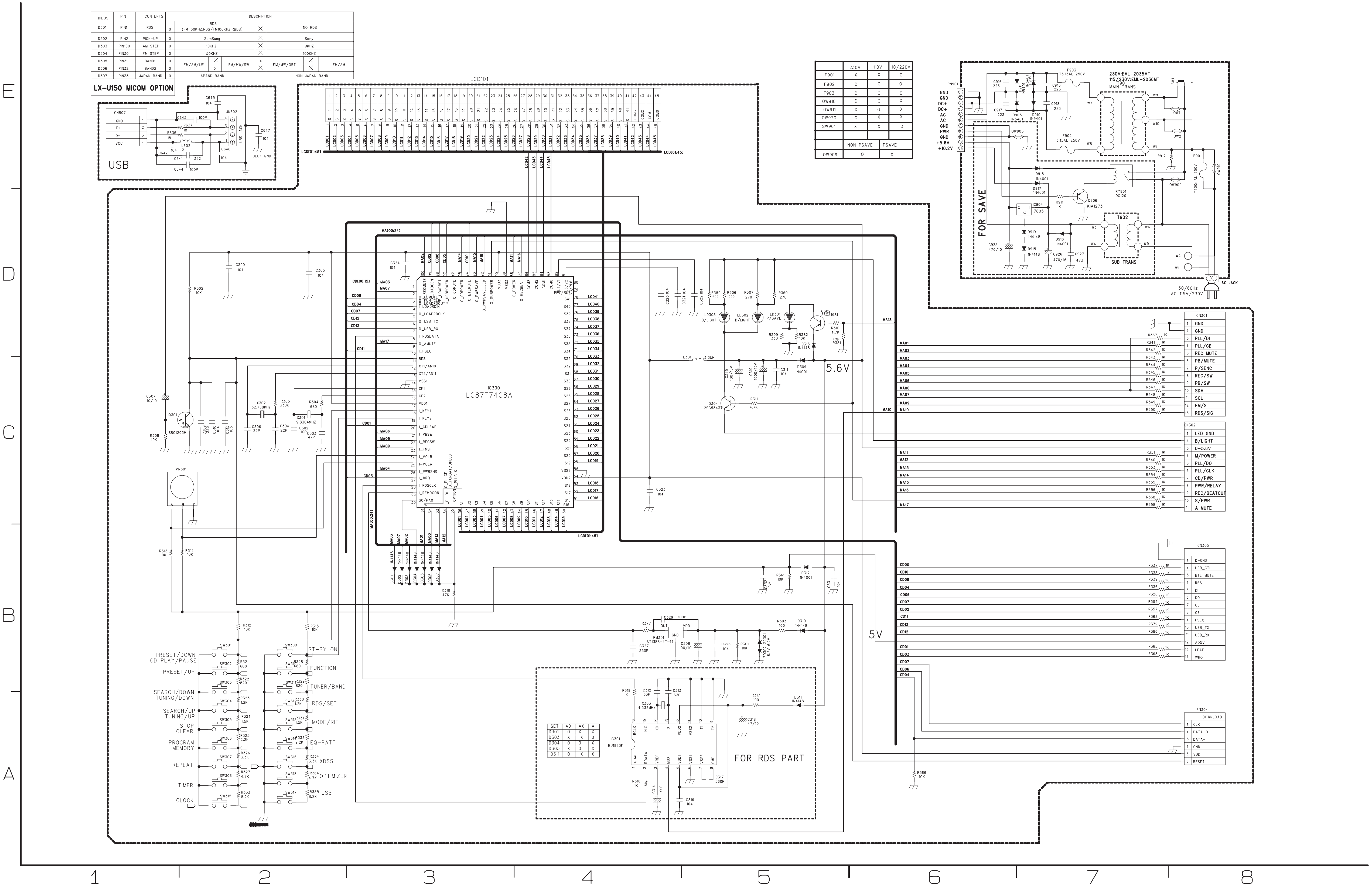
E
D
C
B
A
1
2
3
4
5
6
7
8
JK602
HSP-212V-04
AUX IN
L-CH
R-CH
AUX_L
AUX_R
CHASSIS
CN601
TO CD BD.
CD_6.2V
CD_5V
MGND
DGND
DGND
CD_L
GND
CD_R
D_6.2V
CD_5V
CD_L
CD_R
REC_L
CD_L
TUNER_L
AUX_L
DECK_L
IC601
TDA7468D
DECK_R
AUX_R
TUNER_R
CD_R
A-MUTE
REC_R
Q701
STC128
Q702
STC128
IC701
LA4631
IN_L
GND
IN_R
OUT_L
OUT_R
FILTER
P.P
STANDBY
TO SPEAKER
JK701
JK702
KJHP35
Q703
KTC3205
OW701
IC902
KIA7805/LM7805
IC903
7809
IC905
KA78R05
A 10.2V
D_6.2V
CD_5V
D 12V
ERASE HEAD
L ch
R ch
CN202
PN202
SW201-C
SW201-D
SW201-E
SW201-F
SW201-B
SW201-A
DECK MECHA.
MOTOR+
LEAF SW
MOTOR GND
LEAF SW
IC201
AN7312
ALC
Q208
STD1862LPF
CN201
GA-PN10
PN201
GA-PN10
REC/BEATCUT
VCC
REC/SW
PB/SW
GND
REC/R
REC/L
PB/L
PB/R
MOTOR/GND
Q201
KTC3205
Q202
SRA2202M
Q203
SRC1202M
Q204
KTC3198Y
PB SW
REC SW
Q255
STC128
Q256
STC128
Q205
STC128
Q206
STC128
CN901
GA-PN11
GND
GND
DC+
DC+
AC
AC
GND
PWR
GND
+5.6V
+10.2V
DIGITAL OUT
JK801
CN805
TO TUNER
D_6.2V
TUN_L
TUN_R
PLL/CE
PLL/DI
PLL/CLK
PLL/DO
FM/ST
RDS/SIG
A 10.2V
GND
GND
PLL/DI
PLL/CE
REC-MUTE
PB/MUTE
P/SENC
REC/SW
PB/SW
SDA
SCL
FM/ST
RDS/SIG
PN301
GA-PN13
TO MCU
PN302
GA-PN11
TO MCU
LED GND
B/LIGHT
D-5.6V
W/POWER
PLL/DO
PLL/CLK
CD/PWR
P/RELAY
BEATOUT
S/PWR
A MUTE
C929 BEAD

	NON PSAVE	PSAVE				
OW901	X	0				
OW902	X	0				
OW903	0	X				
OW904	0	X				

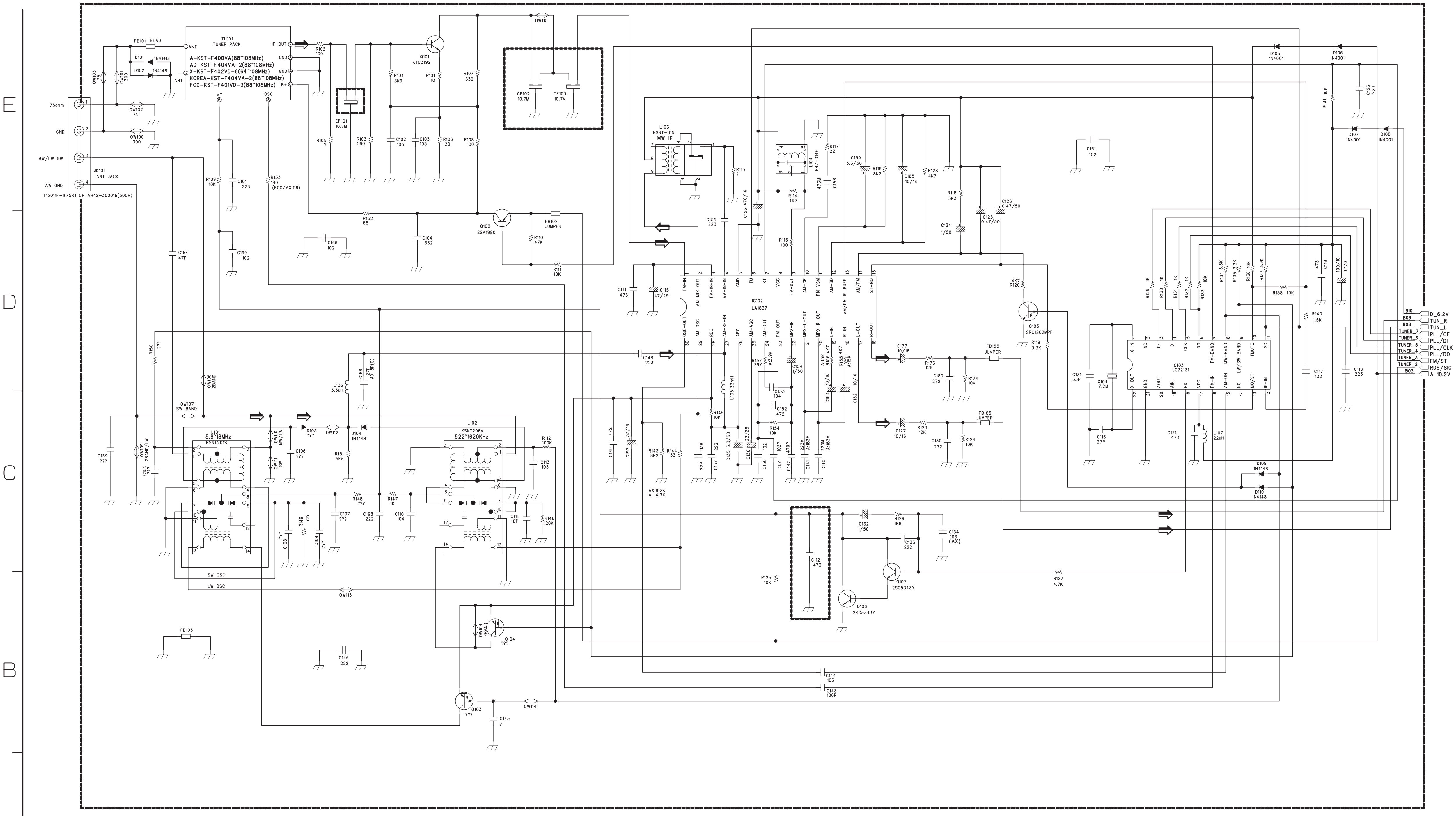
• CD & USB SCHEMATIC DIAGRAM


PN801
PICKUP
CN802
SPINDLE
SLIDE
LIMIT SW
TOP LOADING
CN808
OPEN/CLOSE
GND
IC801
LC78690NW
DSP MP3 WMA
IC802
SA5810
DRIVE
IC803
OTI6888
USB 1.1
IC806
LM1117S-3.3V
Q801
2SA1981
Q802
SRA2202M
Q805
KIA1273
Q806
2SC5343
OPTICAL
CN603
PN807
USB
PN305
FRONT PCB
PN601
MAIN PCB
LVDD
DVDD
SVDD
AVDD
UVDD
UVDD2
DGND
MGND
AGND
UGND
STDATA
STCK
STREQ
RESET
TX
RX
+5V
A
B
C
D
E
1
2
3
4
5
6
7
8

• FRONT, POWER & USB SCHEMATIC DIAGRAM


LX-U150 MICOM OPTION
USB
LCD101
IC300
LC87F74C8A
5.6V
5V
FOR SAVE
MAIN TRANS
SUB TRANS
AC JACK
50/60Hz
AC 115V/230V
FOR RDS PART
IC301
BU1923F
CN301
CN302
CN305
PN304
DOWNLOAD
PRESET/DOWN
CD PLAY/PAUSE
PRESET/UP
SEARCH/DOWN
TUNING/DOWN
SEARCH/UP
TUNING/UP
STOP
CLEAR
PROGRAM
MEMORY
REPEAT
TIMER
CLOCK
ST-BY ON
FUNCTION
TUNER/BAND
RDS/SET
MODE/RIF
EQ-PATT
XDSS
OPTIMIZER
USB
E
D
C
B
A
1
2
3
4
5
6
7
8

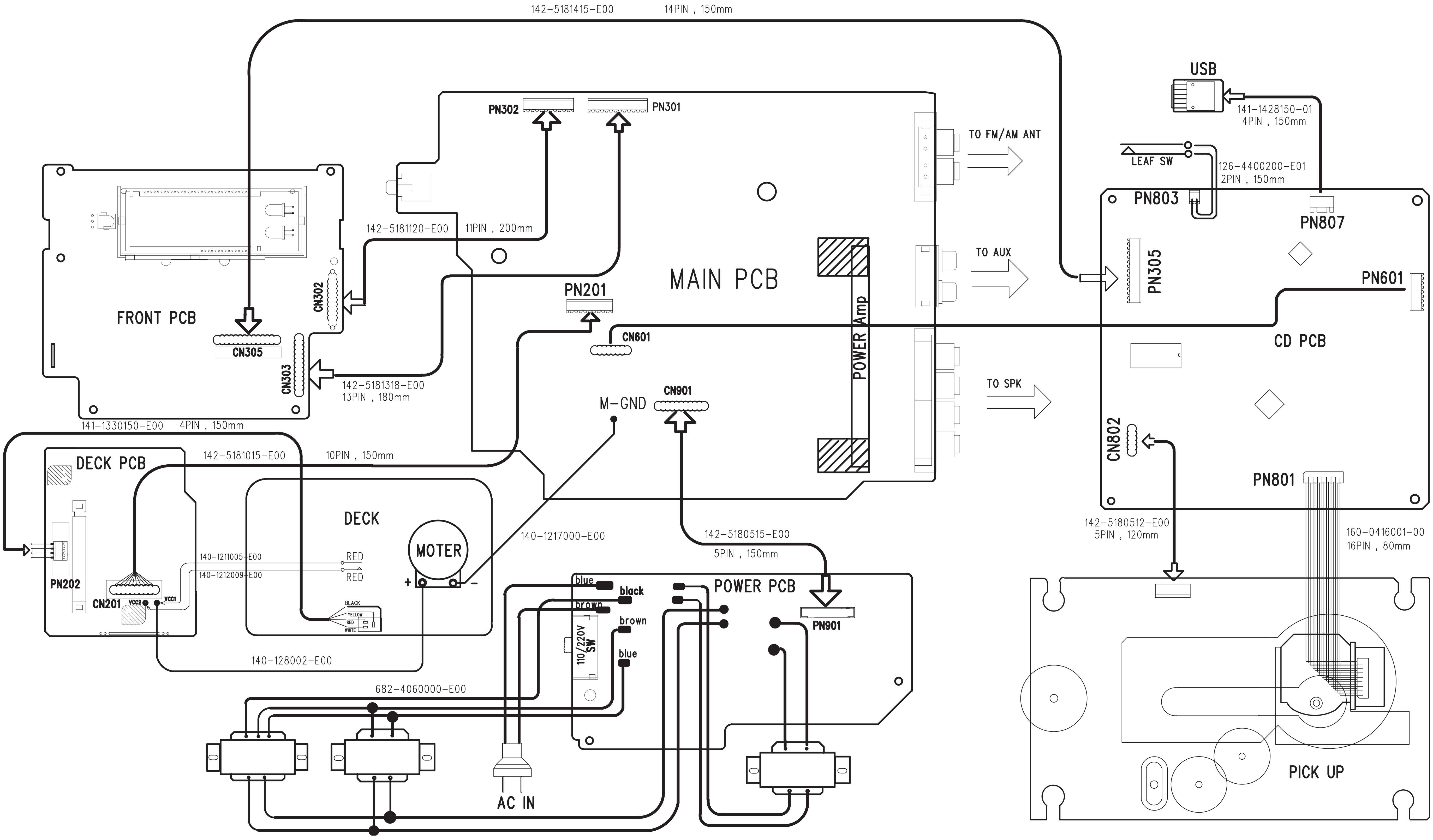
• TUNER SCHEMATIC DIAGRAM


E
D
C
B
A
TU101
TUNER PACK
A-KST-F400VA(88~108MHz)
AD-KST-F404VA-2(88~108MHz)
X-KST-F402VD-6(64~108MHz)
KOREA-KST-F404VA-2(88~108MHz)
FCC-KST-F401VD-3(88~108MHz)
JK101
ANT JACK
T1501IF-1(75R) OR AH42-30001B(300R)
75ohm
GND
MW/LW SW
AW GND
FB101 BEAD
D101 1N4148
D102 1N4148
Q101
KTC3192
Q102
2SA1980
CF101
10.7M
CF102
10.7M
CF103
10.7M
OW115
L103
KSNT-1051
MW IF
IC102
LA1837
IC103
LC72131
Q105
SRC1202MPF
Q106
2SC5343Y
Q107
2SC5343Y
Q103
Q104
L101
5.8~18MHz
KSNT2015
L102
KSNT2086M
522~1620KHz
SW OSC
LW OSC
X104
7.2M
L107
22uH
D105 1N4001
D106 1N4001
D107 1N4001
D108 1N4001
D109 1N4148
D110 1N4148
B10 D_6.2V
B09 TUN_R
B08 TUN_L
TUNER_7 PLL/CE
TUNER_6 PLL/DI
TUNER_5 PLL/CLK
TUNER_4 PLL/DO
TUNER_3 FM/ST
TUNER_2 RDS/SIG
B03 A 10.2V
AX:8.2K
A :4.7K

REF	R143	CF101	CF102	CF103	OW115
AD	8.2K	0	0	0	x
AX	15K	0	x	0	0
A	2.7K	0	0	0	x

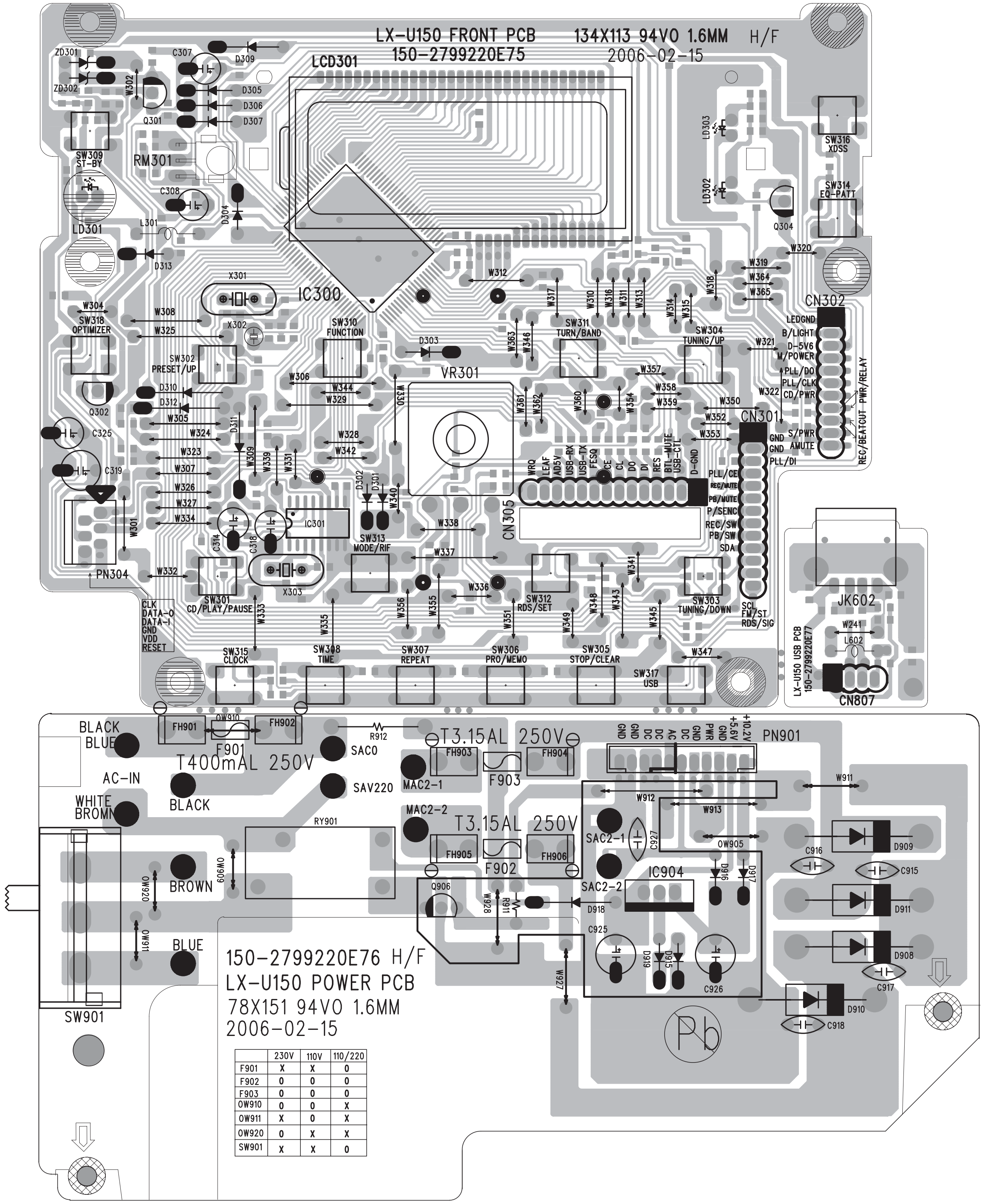
1 2 3 4 5 6 7 8

❑ WIRING DIAGRAM


142-5181415-E00
14PIN , 150mm
USB
141-1428150-01
4PIN , 150mm
PN302
PN301
TO FM/AM ANT
LEAF SW
126-4400200-E01
2PIN , 150mm
PN803
PN807
142-5181120-E00
11PIN , 200mm
TO AUX
PN305
PN601
FRONT PCB
CN302
PN201
MAIN PCB
POWER Amp
CN305
CN601
CD PCB
CN303
142-5181318-E00
13PIN , 180mm
TO SPK
M-GND
CN901
141-1330150-E00
4PIN , 150mm
CN802
DECK PCB
142-5181015-E00
10PIN , 150mm
PN801
DECK
140-1217000-E00
142-5180515-E00
5PIN , 150mm
142-5180512-E00
5PIN , 120mm
160-0416001-00
16PIN , 80mm
140-1211005-E00
RED
140-1212009-E00
RED
MOTER
PN202
+
-
blue
black
POWER PCB
CN201
VCC2
VCC1
BLACK
YELLOW
RED
WHITE
brown
brown
PN901
110/220V SW
blue
140-128002-E00
682-4060000-E00
AC IN
PICK UP

❑ PRINTED CIRCUIT DIAGRAMS

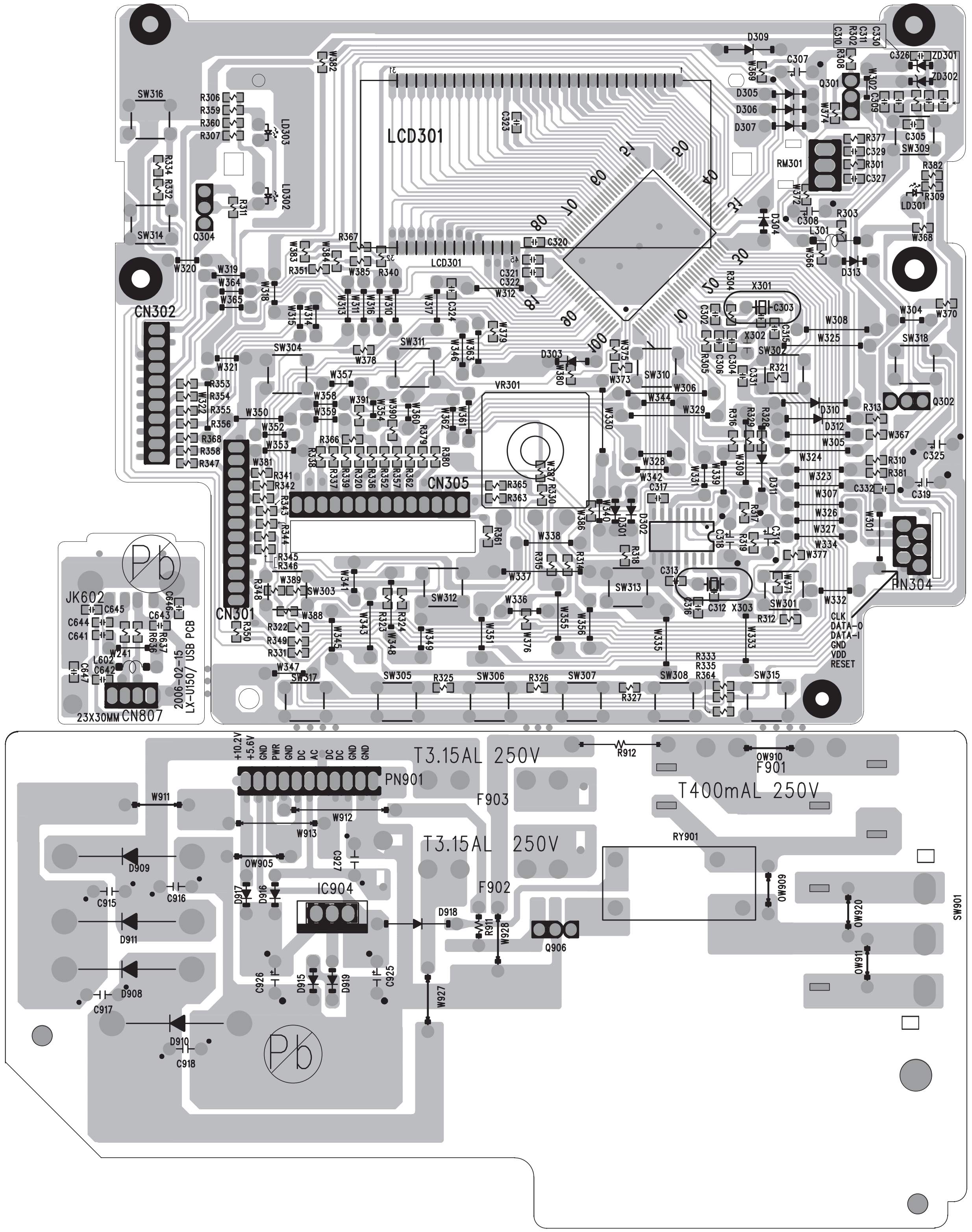
• FRONT, POWER & USB P.C. BOARD (Top View)



LX-U150 FRONT PCB
150-2799220E75
134X113 94V0 1.6MM
H/F
2006-02-15
LCD301
IC300
VR301
CN301
CN302
CN305
IC301
JK602
CN807
LX-U150 USB PCB
150-2799220E77
PN304
SW309 ST-BY
SW318 OPTIMIZER
SW302 PRESET/UP
SW310 FUNCTION
SW311 TURN/BAND
SW304 TUNING/UP
SW316 XDSS
SW314 EQ-PATT
SW313 MODE/RIF
SW301 CD/PLAY/PAUSE
SW312 RDS/SET
SW303 TUNING/DOWN
SW315 CLOCK
SW308 TIME
SW307 REPEAT
SW306 PRO/MEMO
SW305 STOP/CLEAR
SW317 USB
BLACK
BLUE
AC-IN
WHITE
BROWN
SW901
F901
T400mAL 250V
T3.15AL 250V
F902
F903
SACO
SAV220
MAC2-1
MAC2-2
SAC2-1
SAC2-2
RY901
IC904
PN901
150-2799220E76 H/F
LX-U150 POWER PCB
78X151 94V0 1.6MM
2006-02-15

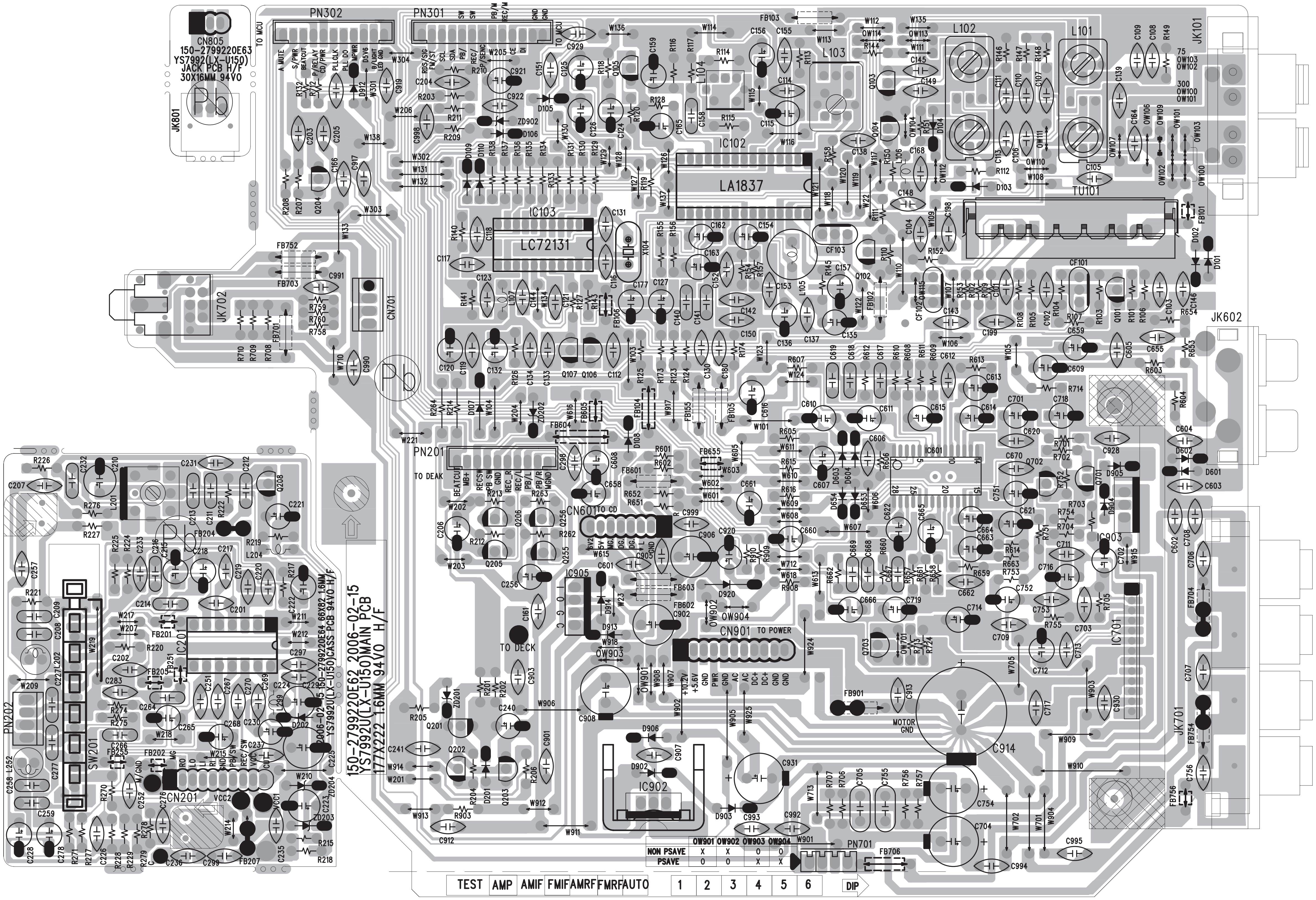
	230V	110V	110/220
F901	X	X	0
F902	0	0	0
F903	0	0	0
OW910	0	0	X
OW911	X	0	X
OW920	0	X	X
SW901	X	X	0

• FRONT, POWER & USB P.C. BOARD (Bottom View)

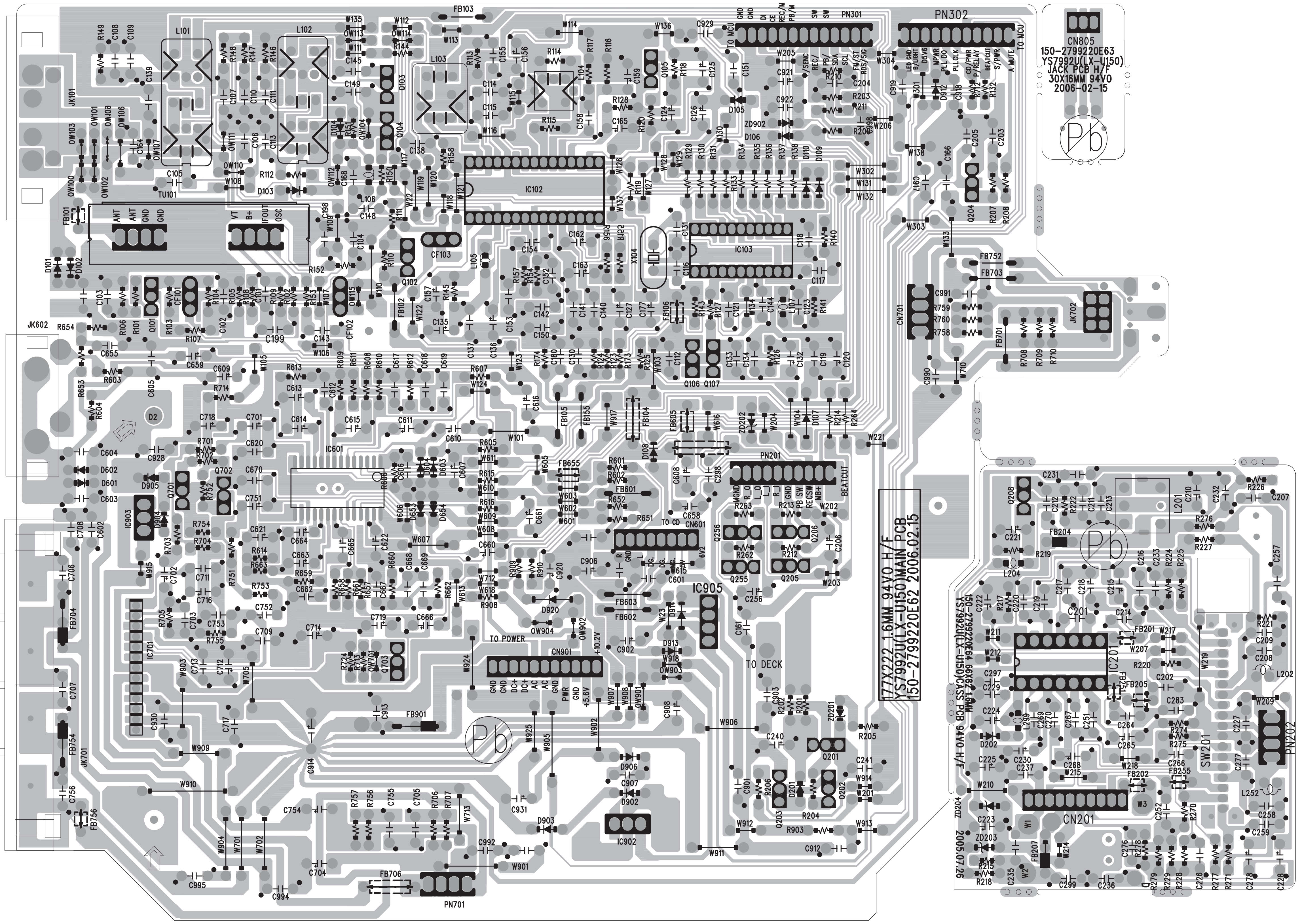


LCD301
CN302
CN301
CN305
VR301
JK602
CN807
23X30MM
2006-02-15
LX-U150/ USB PCB
PN304
PN901
T3.15AL 250V
T400mAL 250V
F901
F902
F903
RY901
IC904
SW901

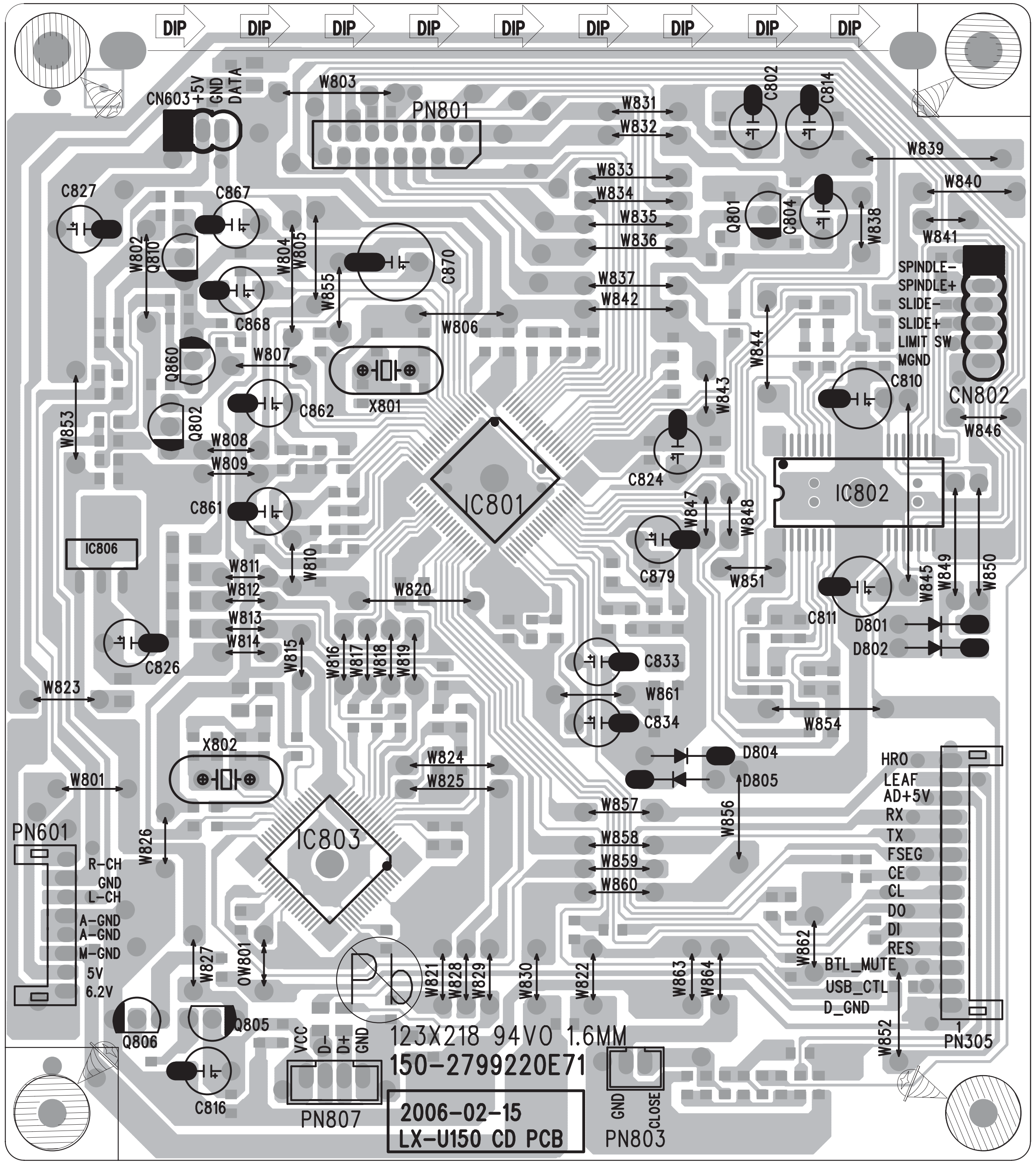
• MAIN/DECK P.C. BOARD (Top View)


PN302
PN301
TO MCU
CN805
150-2799220E63
YS7992(LX-U150)
JACK PCB H/F
30X16MM 94V0
JK801
Pb
IC103
LC72131
IC102
LA1837
L101
L102
L103
L104
JK101
TU101
CF101
CF103
JK602
JK702
CN701
PN201
TO DEAK
CN601
TO CD
IC601
IC903
IC905
TO DECK
CN901
TO POWER
IC902
C914
MOTOR GND
JK701
IC701
PN701
IC201
CN201
SW201
PN202
150-2799220E62 2006-02-15
YS7992U(LX-U150)MAIN PCB
177X222 1.6MM 94V0 H/F
2006-02-15 150-2799220E64 66X82 1.6MM
YS7992U(LX-U150)CASS PCB 94V0 H/F
OW901 OW902 OW903 OW904
NON PSAVE X X 0 0
PSAVE 0 0 X X
TEST
AMP
AMIF
FMIF
AMRF
FMRF
AUTO
1
2
3
4
5
6
DIP

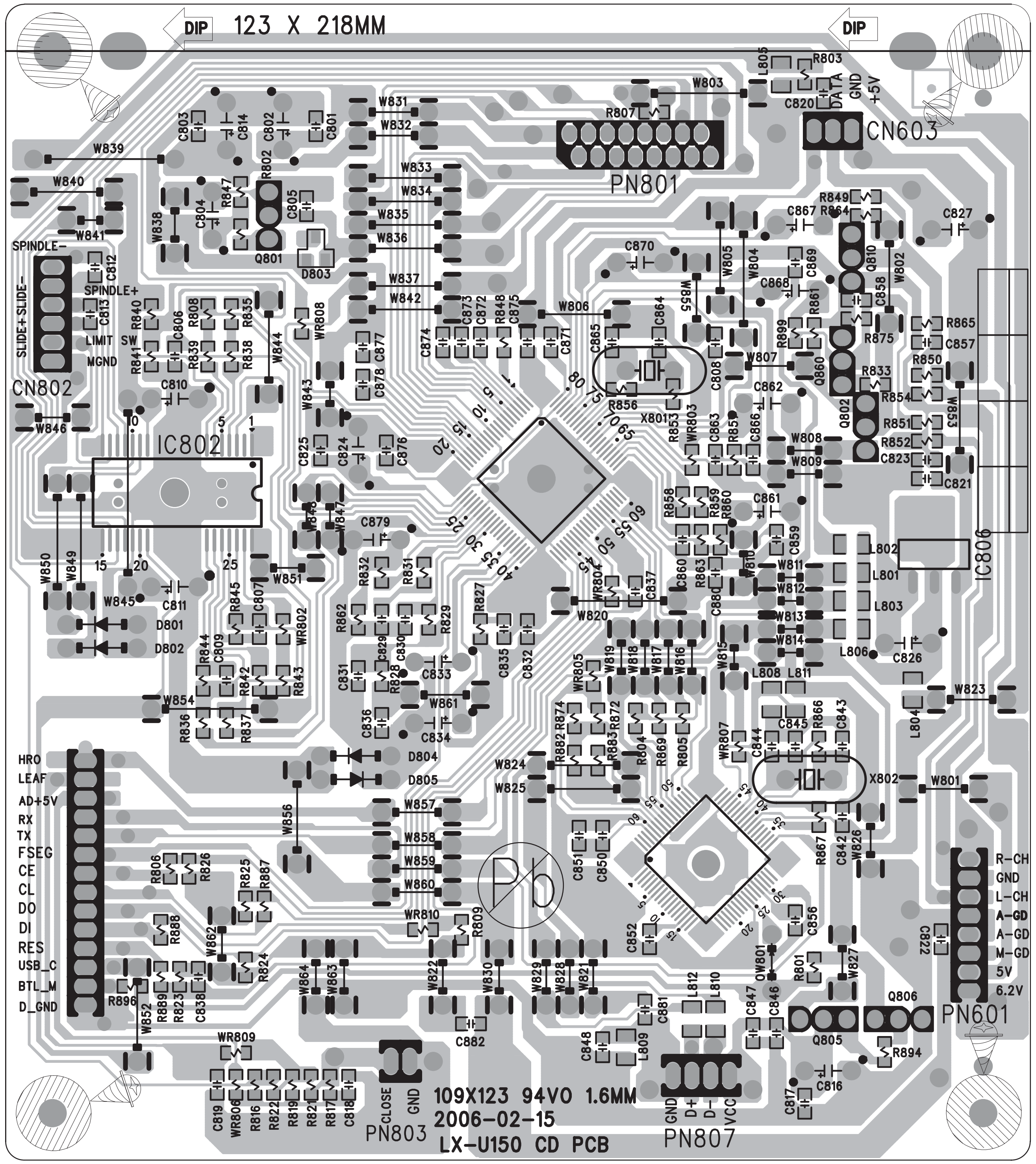
• MAIN/DECK P.C. BOARD (Bottom View)


177X222 1.6MM 94V0 H/F
YS7992U(LX-U150)MAIN PCB
150-2799220E62 2006.02.15
CN805
150-2799220E63
YS7992U(LX-U150)
JACK PCB H/F
30X16MM 94V0
2006-02-15
150-2799220E64 66X82 1.6MM
YS7992U(LX-U150)CASS PCB 94V0 H/F
2005.07.26
PN301
PN302
TO MCU
IC102
IC103
IC601
IC701
IC903
IC905
IC902
IC201
CN601
TO CD
CN701
CN901
TO POWER
TO DECK
PN201
PN202
PN701
CN201
SW201
JK101
JK602
JK701
JK702
TU101
ANT
GND
VT
B+
IFOUT
OSC
L101
L102
L103
X104
CF101
CF102
CF103
Pb

• CD P.C. BOARD(Top View)

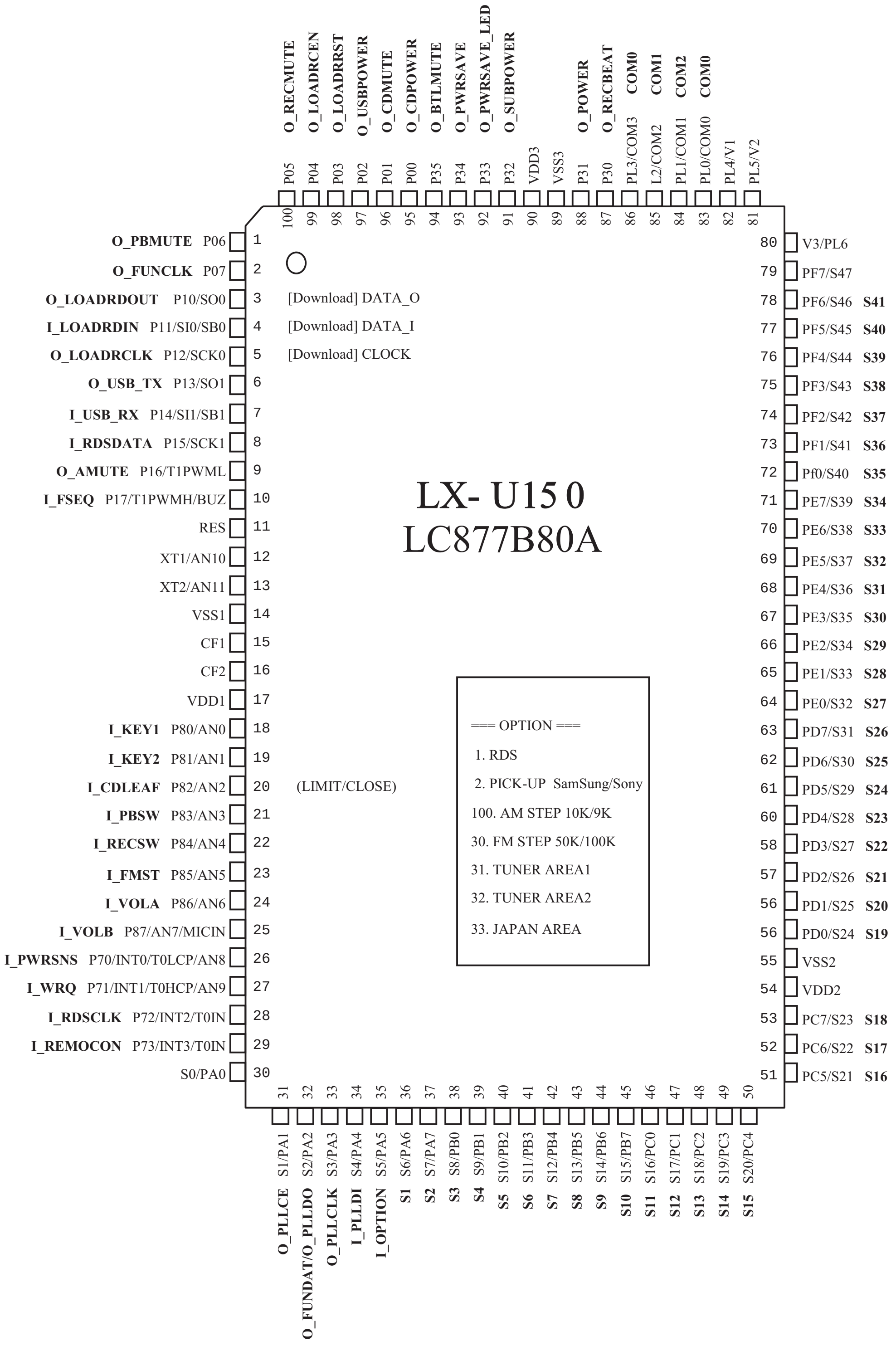

DIP
CN603
+5V
GND
DATA
W803
PN801
W831
W832
C802
C814
W839
W840
C827
C867
W833
W834
W835
W836
Q801
C804
W838
W841
W802
Q810
W804
W805
C870
SPINDLE-
SPINDLE+
SLIDE-
SLIDE+
LIMIT SW
MGND
W855
W837
W842
C868
W806
W844
W807
Q860
X801
C810
CN802
W853
Q802
C862
W843
W846
W808
W809
IC801
C824
IC802
C861
W847
W848
IC806
W810
C879
W811
W812
W851
W845
W849
W850
W820
C811
D801
D802
W813
W814
C826
W815
W816
W817
W818
W819
C833
W823
W861
C834
W854
X802
W824
D804
W801
W825
D805
HRO
LEAF
AD+5V
RX
TX
FSEG
CE
CL
DO
DI
RES
BTL_MUTE
USB_CTL
D_GND
PN601
R-CH
GND
L-CH
A-GND
A-GND
M-GND
5V
6.2V
W826
IC803
W857
W858
W859
W860
W856
W827
OW801
W821
W828
W829
W830
W822
W862
W863
W864
Q805
Q806
C816
VCC
D-
D+
GND
123X218 94V0 1.6MM
150-2799220E71
W852
PN305
PN807
2006-02-15
LX-U150 CD PCB
CLOSE
PN803

• CD P.C. BOARD(Bottom View)


DIP
123 X 218MM
L805
R803
W803
C820
DATA
GND
+5V
R807
CN603
W831
W832
C803
C814
C802
C801
PN801
W839
W833
R802
W840
W834
R847
C805
R849
R864
C867
C827
W838
C804
W835
Q801
W841
W836
D803
C870
W805
W804
C869
Q810
W802
SPINDLE-
C812
C813
W837
W842
C868
R861
C858
SPINDLE+
R840
C806
R808
R835
W808
C873
C872
R848
C875
W806
C884
W855
R899
R865
C857
R875
SLIDE+SLIDE-
LIMIT SW
MGND
R841
R839
R838
W844
C874
C877
C871
C865
R856
C808
W807
Q860
R833
R850
CN802
C810
C878
W843
X801
R853
WR803
C863
R859
C866
C862
R854
W853
W846
IC802
C825
C824
C876
C858
R869
R860
W808
W809
R851
R852
C823
C821
Q802
C847
C879
C861
C859
L802
W850
W849
W851
R832
R831
C860
R863
W810
W811
W812
L801
IC806
W845
C811
R845
C807
WR802
R862
C830
C829
R827
W820
C837
WR804
C880
W813
W814
L803
D801
R844
C809
R829
C835
C832
W815
L806
C826
D802
R842
R843
C831
R828
C833
WR805
W819
W818
W817
W816
L808
L811
W823
W854
W861
R882
R874
R883
R872
C845
R866
C843
L804
R836
R837
C836
C834
R804
R869
R805
WR807
C844
HRO
LEAF
D804
W824
X802
W801
D805
W825
AD+5V
RX
TX
W856
W857
W858
C851
C850
R867
C842
W826
R-CH
GND
L-CH
A-GD
A-GD
M-GD
5V
6.2V
FSEG
CE
CL
DO
DI
RES
USB_C
BTL_M
D_GND
R806
R826
R825
R887
W859
W860
WR810
R809
C852
C856
C822
R888
W862
R824
W864
W863
W822
W830
W829
W828
W821
OW801
R801
W827
Q806
R896
R889
R823
C838
R852
C881
L812
L810
C847
C846
Q805
R894
PN601
W852
WR809
C882
C848
L809
C817
C816
C819
WR806
R816
R822
R819
R821
R817
C818
CLOSE
GND
PN803
109X123 94V0 1.6MM
2006-02-15
LX-U150 CD PCB
GND
D+
D-
VCC
PN807

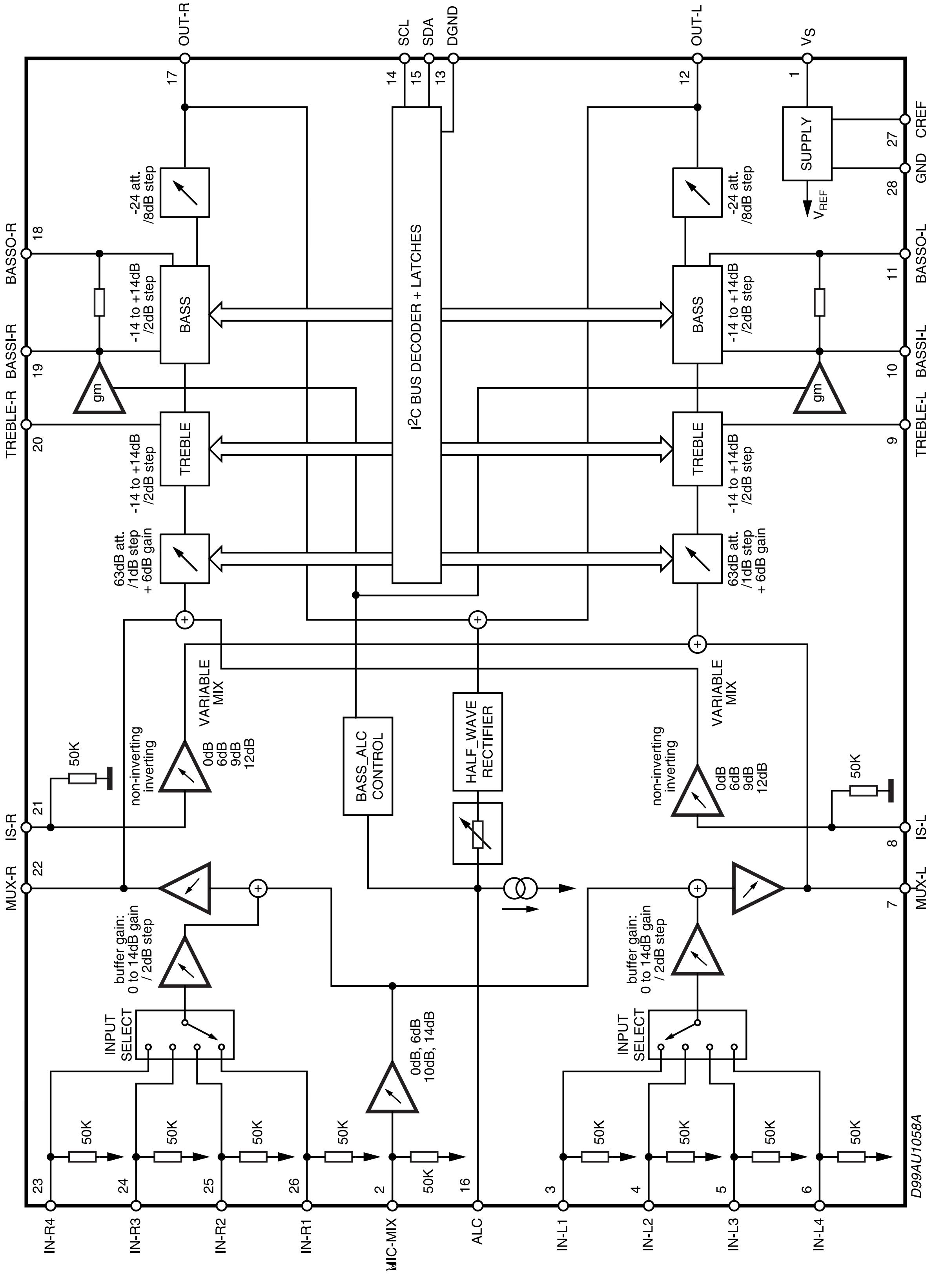
❑ INTERNAL BLOCK DIAGRAM OF ICs

■ IC300 LC877B80A

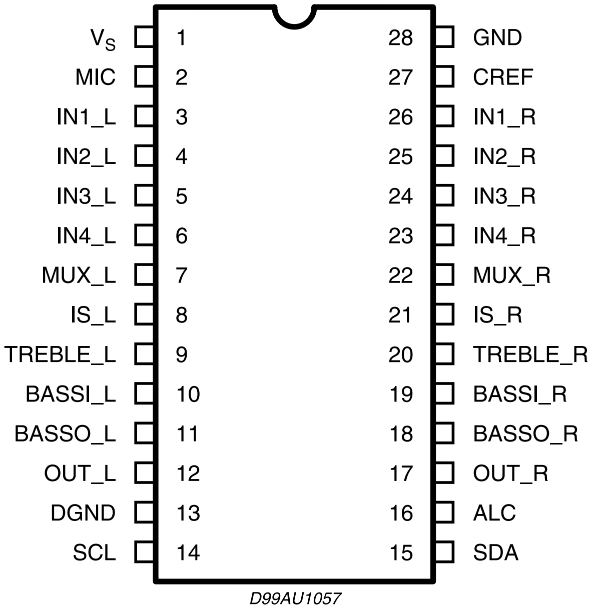

O_RECMUTE P05 100
O_LOADRCEN P04 99
O_LOADRRST P03 98
O_USBPOWER P02 97
O_CDMUTE P01 96
O_CDPOWER P00 95
O_BTLMUTE P35 94
O_PWRSAVE P34 93
O_PWRSAVE_LED P33 92
O_SUBPOWER P32 91
VDD3 90
VSS3 89
O_POWER P31 88
O_RECBEAT P30 87
COM0 PL3/COM3 86
COM1 L2/COM2 85
COM2 PL1/COM1 84
COM0 PL0/COM0 83
PL4/V1 82
PL5/V2 81
O_PBMUTE P06 1
O_FUNCLK P07 2
O_LOADRDOUT P10/SO0 3
I_LOADRDIN P11/SI0/SB0 4
O_LOADRCLK P12/SCK0 5
O_USB_TX P13/SO1 6
I_USB_RX P14/SI1/SB1 7
I_RDSDATA P15/SCK1 8
O_AMUTE P16/T1PWML 9
I_FSEQ P17/T1PWMH/BUZ 10
RES 11
XT1/AN10 12
XT2/AN11 13
VSS1 14
CF1 15
CF2 16
VDD1 17
I_KEY1 P80/AN0 18
I_KEY2 P81/AN1 19
I_CDLEAF P82/AN2 20
I_PBSW P83/AN3 21
I_RECSW P84/AN4 22
I_FMST P85/AN5 23
I_VOLA P86/AN6 24
I_VOLB P87/AN7/MICIN 25
I_PWRSNS P70/INT0/T0LCP/AN8 26
I_WRQ P71/INT1/T0HCP/AN9 27
I_RDSCLK P72/INT2/T0IN 28
I_REMOCON P73/INT3/T0IN 29
S0/PA0 30
[Download] DATA_O
[Download] DATA_I
[Download] CLOCK
LX- U15 0
LC877B80A
(LIMIT/CLOSE)
=== OPTION ===
1. RDS
2. PICK-UP SamSung/Sony
100. AM STEP 10K/9K
30. FM STEP 50K/100K
31. TUNER AREA1
32. TUNER AREA2
33. JAPAN AREA
80 V3/PL6
79 PF7/S47
78 PF6/S46 S41
77 PF5/S45 S40
76 PF4/S44 S39
75 PF3/S43 S38
74 PF2/S42 S37
73 PF1/S41 S36
72 Pf0/S40 S35
71 PE7/S39 S34
70 PE6/S38 S33
69 PE5/S37 S32
68 PE4/S36 S31
67 PE3/S35 S30
66 PE2/S34 S29
65 PE1/S33 S28
64 PE0/S32 S27
63 PD7/S31 S26
62 PD6/S30 S25
61 PD5/S29 S24
60 PD4/S28 S23
58 PD3/S27 S22
57 PD2/S26 S21
56 PD1/S25 S20
56 PD0/S24 S19
55 VSS2
54 VDD2
53 PC7/S23 S18
52 PC6/S22 S17
51 PC5/S21 S16
31 S1/PA1 O_PLLCE
32 S2/PA2 O_FUNDAT/O_PLLDO
33 S3/PA3 O_PLLCLK
34 S4/PA4 I_PLLDI
35 S5/PA5 I_OPTION
36 S6/PA6 S1
37 S7/PA7 S2
38 S8/PB0 S3
39 S9/PB1 S4
40 S10/PB2 S5
41 S11/PB3 S6
42 S12/PB4 S7
43 S13/PB5 S8
44 S14/PB6 S9
45 S15/PB7 S10
46 S16/PC0 S11
47 S17/PC1 S12
48 S18/PC2 S13
49 S19/PC3 S14
50 S20/PC4 S15

■ IC601 TDA7468D

1) BLOCK DIAGRAM

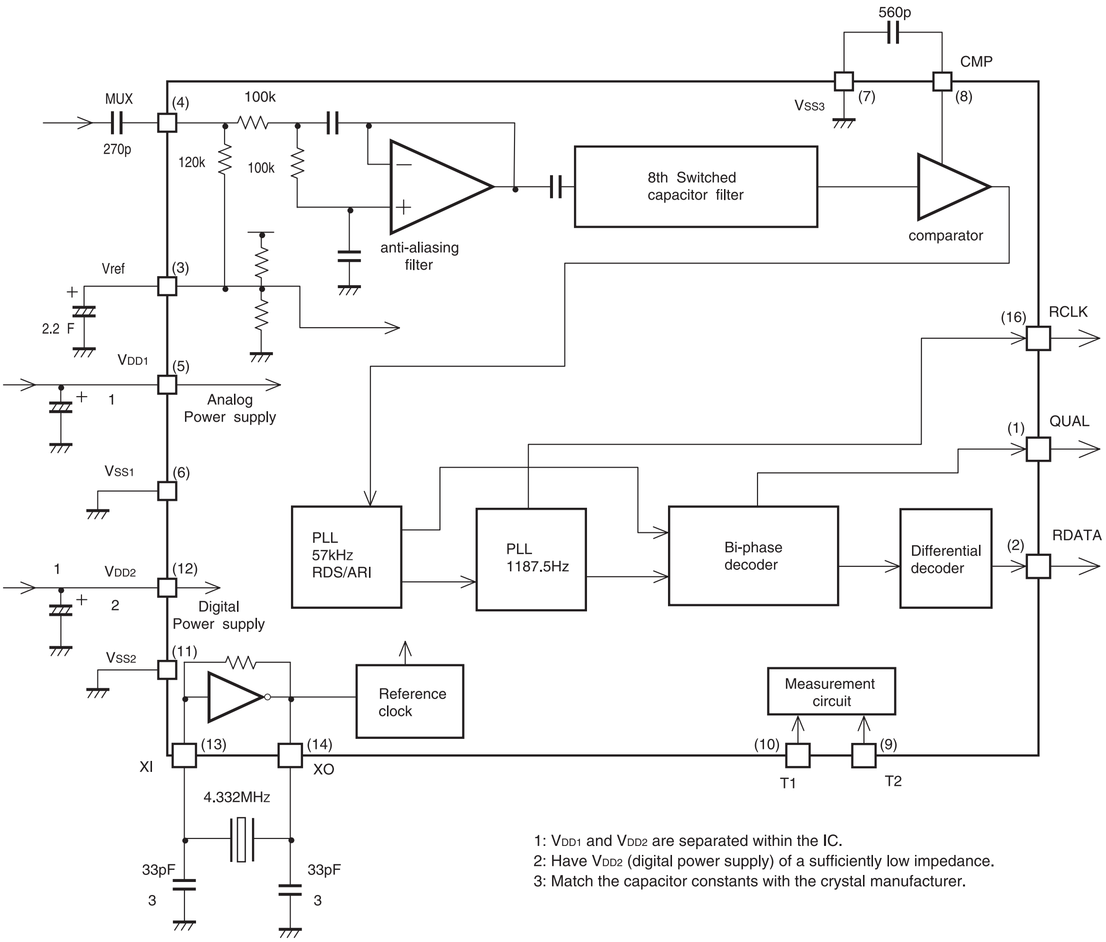

OUT-R
17
SCL
SDA
DGND
14
15
13
OUT-L
12
VS
1
SUPPLY
CREF
27
GND
28
V_{REF}
-24 att.
/8dB step
BASSO-R
18
BASSI-R
19
TREBLE-R
20
BASS
-14 to +14dB
/2dB step
gm
TREBLE
63dB att.
/1dB step
+ 6dB gain
I2C BUS DECODER + LATCHES
BASSO-L
11
BASSI-L
10
TREBLE-L
9
VARIABLE
MIX
non-inverting
inverting
0dB
6dB
9dB
12dB
50K
IS-R
21
MUX-R
22
BASS_ALC
CONTROL
HALF_WAVE
RECTIFIER
IS-L
8
MUX-L
7
buffer gain:
0 to 14dB gain
/ 2dB step
INPUT
SELECT
0dB, 6dB
10dB, 14dB
23
24
25
26
2
16
3
4
5
6
IN-R4
IN-R3
IN-R2
IN-R1
MIC-MIX
ALC
IN-L1
IN-L2
IN-L3
IN-L4
D99AU1058A

2) PIN COFIGURATION


V_S 1
MIC 2
IN1_L 3
IN2_L 4
IN3_L 5
IN4_L 6
MUX_L 7
IS_L 8
TREBLE_L 9
BASSI_L 10
BASSO_L 11
OUT_L 12
DGND 13
SCL 14
28 GND
27 CREF
26 IN1_R
25 IN2_R
24 IN3_R
23 IN4_R
22 MUX_R
21 IS_R
20 TREBLE_R
19 BASSI_R
18 BASSO_R
17 OUT_R
16 ALC
15 SDA
D99AU1057

IC301 BU1923F

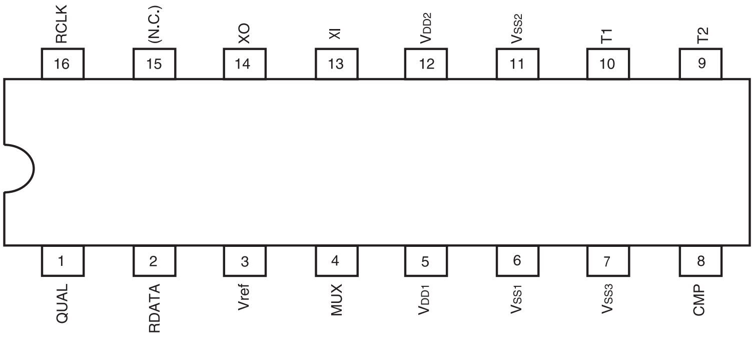
1) BLOCK DIAGRAM



560p
CMP
MUX
(4)
100k
270p
120k
100k
VSS3
(7)
(8)
8th Switched capacitor filter
comparator
anti-aliasing filter
Vref
(3)
2.2 F
VDD1
(5)
1
Analog Power supply
VSS1
(6)
(16)
RCLK
(1)
QUAL
(2)
RDATA
PLL 57kHz RDS/ARI
PLL 1187.5Hz
Bi-phase decoder
Differential decoder
1
VDD2
(12)
2
Digital Power supply
VSS2
(11)
Reference clock
Measurement circuit
XI
(13)
(14)
XO
(10)
(9)
T1
T2
4.332MHz
33pF
3
33pF
3

1: VDD1 and VDD2 are separated within the IC.
2: Have VDD2 (digital power supply) of a sufficiently low impedance.
3: Match the capacitor constants with the crystal manufacturer.

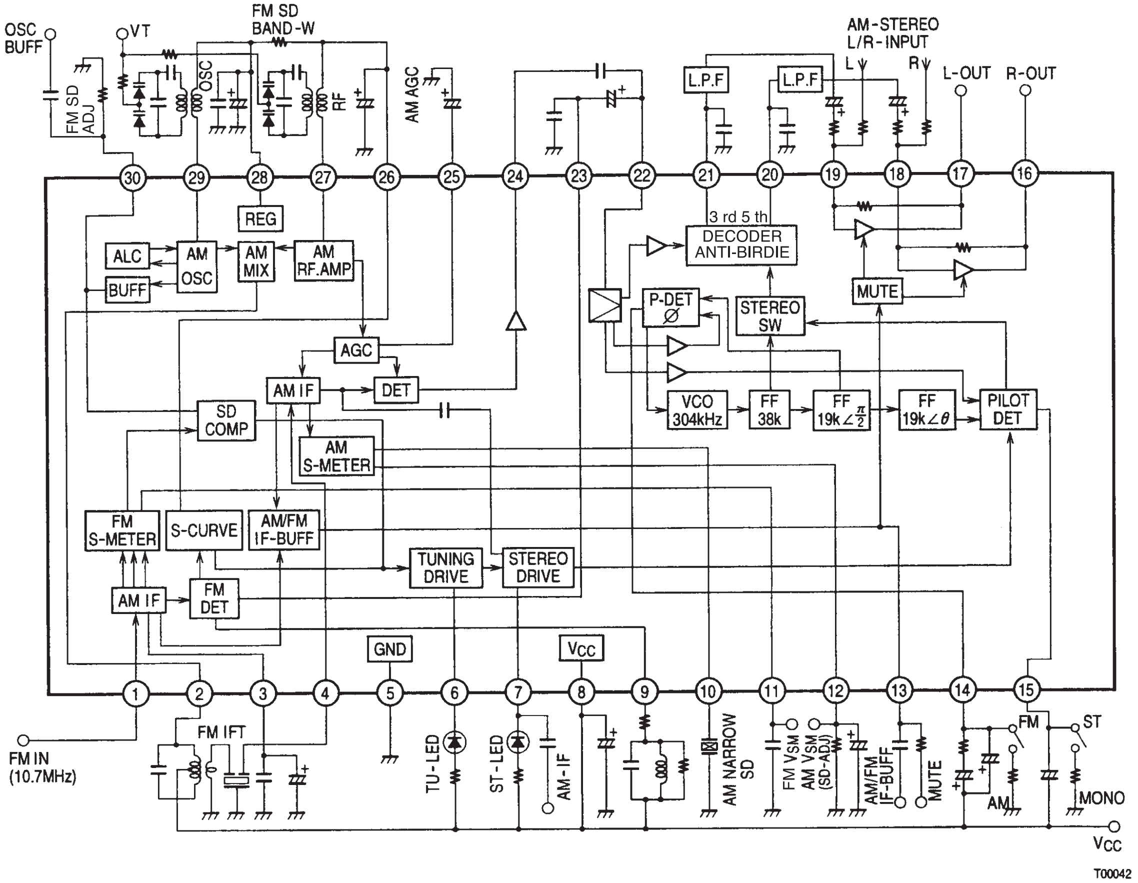
2) PIN COFIGURATION



RCLK
16
(N.C.)
15
XO
14
XI
13
VDD2
12
VSS2
11
T1
10
T2
9
1
QUAL
2
RDATA
3
Vref
4
MUX
5
VDD1
6
VSS1
7
VSS3
8
CMP

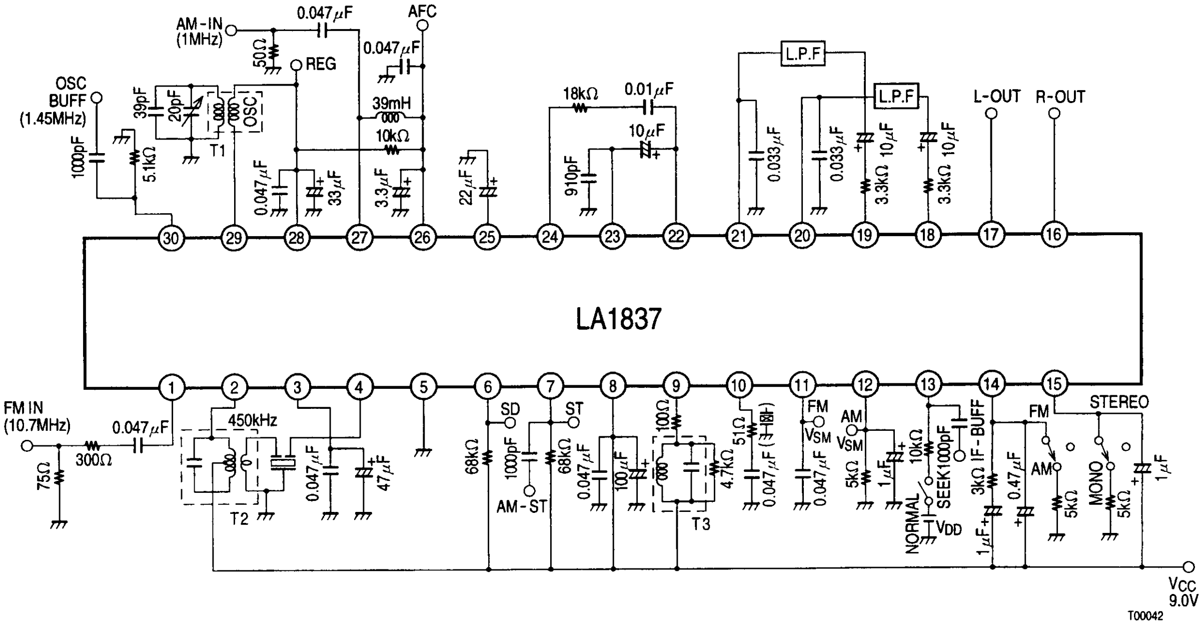
■ IC102 LA1837

1) BLOCK DIAGRAM



OSC BUFF
VT
FM SD BAND-W
FM SD ADJ
OSC
RF
AM AGC
AM-STEREO L/R-INPUT
L
R
L-OUT
R-OUT
L.P.F
L.P.F
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
REG
ALC
AM OSC
AM MIX
AM RF.AMP
BUFF
3 rd 5 th
DECODER ANTI-BIRDIE
MUTE
P-DET ∅
STEREO SW
AGC
AM IF
DET
VCO 304kHz
FF 38k
FF 19k∠π/2
FF 19k∠θ
PILOT DET
SD COMP
AM S-METER
FM S-METER
S-CURVE
AM/FM IF-BUFF
TUNING DRIVE
STEREO DRIVE
AM IF
FM DET
GND
VCC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
FM IFT
FM IN (10.7MHz)
TU-LED
ST-LED
AM-IF
AM NARROW SD
FM VSM
AM VSM (SD-ADJ)
AM/FM IF-BUFF
MUTE
FM
AM
ST
MONO
VCC
T00042

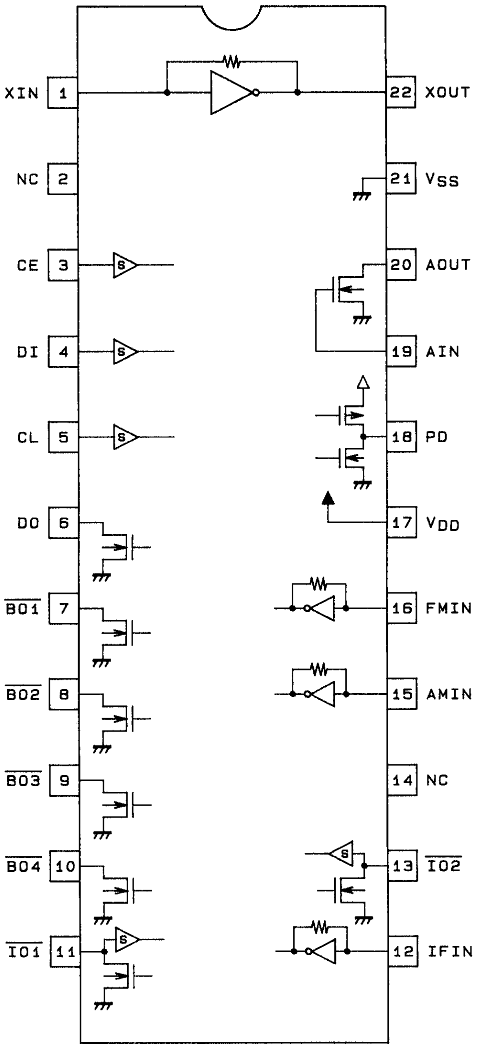
2) TEST CIRCUIT DIAGRAM



AM-IN (1MHz)
0.047μF
AFC
50Ω
REG
0.047μF
OSC BUFF (1.45MHz)
39pF
20pF
OSC
T1
39mH
10kΩ
1000pF
5.1kΩ
0.047μF
33μF
3.3μF
22μF
18kΩ
0.01μF
10μF
910pF
L.P.F
L.P.F
0.033μF
0.033μF
10μF
10μF
3.3kΩ
3.3kΩ
L-OUT
R-OUT
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
LA1837
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
FM IN (10.7MHz)
0.047μF
75Ω
300Ω
450kHz
T2
0.047μF
47μF
68kΩ
SD
1000pF
AM-ST
ST
68kΩ
0.047μF
100μF
100Ω
T3
51Ω
4.7kΩ
0.047μF
FM VSM
0.047μF
AM VSM
5kΩ
1μF
10kΩ
1000pF
SEEK
NORMAL
VDD
IF-BUFF
3kΩ
1μF
0.47μF
FM
AM
5kΩ
STEREO
MONO
5kΩ
1μF
VCC 9.0V
T00042

IC103 LC72131

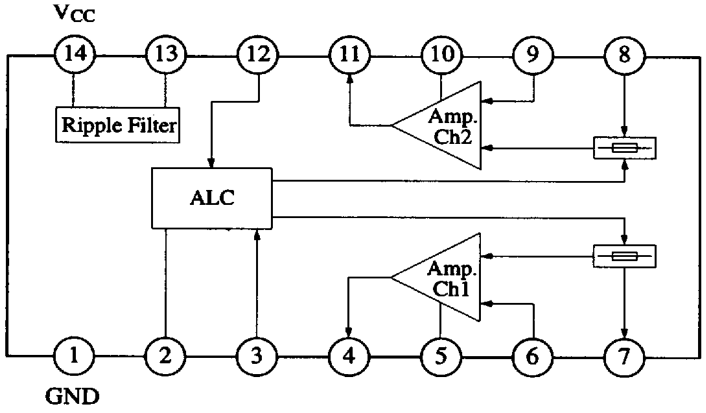
[LC72131]



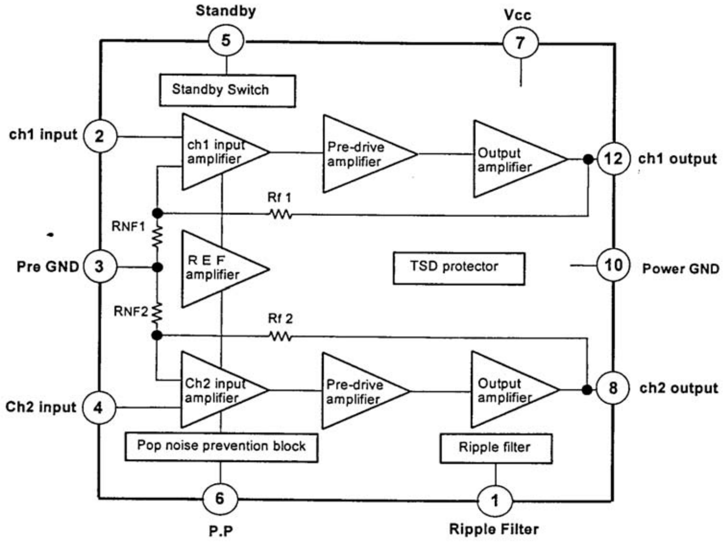
XIN
1
NC
2
CE
3
DI
4
CL
5
DO
6
BO1
7
BO2
8
BO3
9
BO4
10
IO1
11
22
XOUT
21
VSS
20
AOUT
19
AIN
18
PD
17
VDD
16
FMIN
15
AMIN
14
NC
13
IO2
12
IFIN
S

Top view

IC201 AN7312

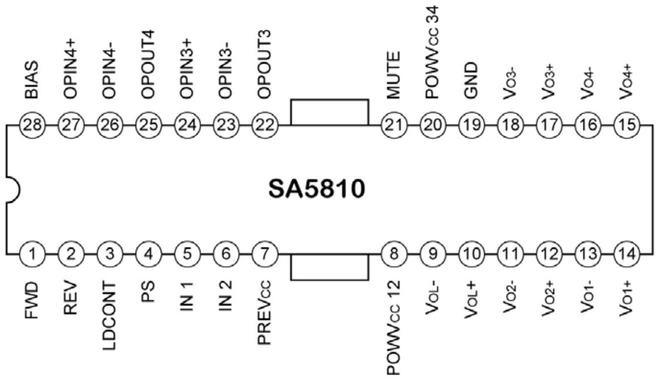

VCC
14
13
12
11
10
9
8
Ripple Filter
Amp.
Ch2
ALC
Amp.
Ch1
1
2
3
4
5
6
7
GND

IC701 LA4631

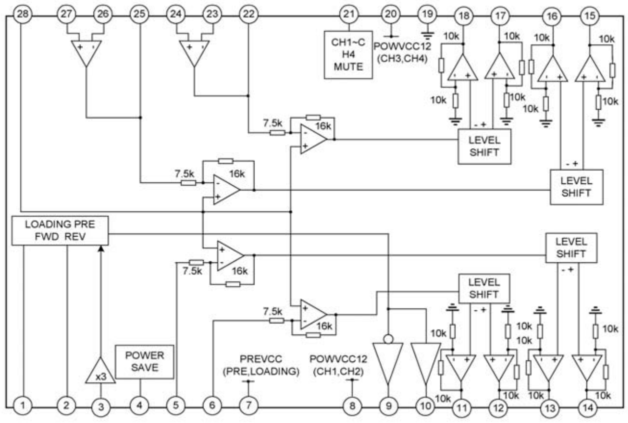

Standby
5
Vcc
7
Standby Switch
ch1 input
2
ch1 input amplifier
Pre-drive amplifier
Output amplifier
12
ch1 output
Rf 1
RNF1
Pre GND
3
R E F amplifier
TSD protector
10
Power GND
RNF2
Rf 2
Ch2 input amplifier
Pre-drive amplifier
Output amplifier
8
ch2 output
Ch2 input
4
Pop noise prevention block
Ripple filter
6
P.P
1
Ripple Filter

IC503 SA5810

1) PIN COFIGURATION

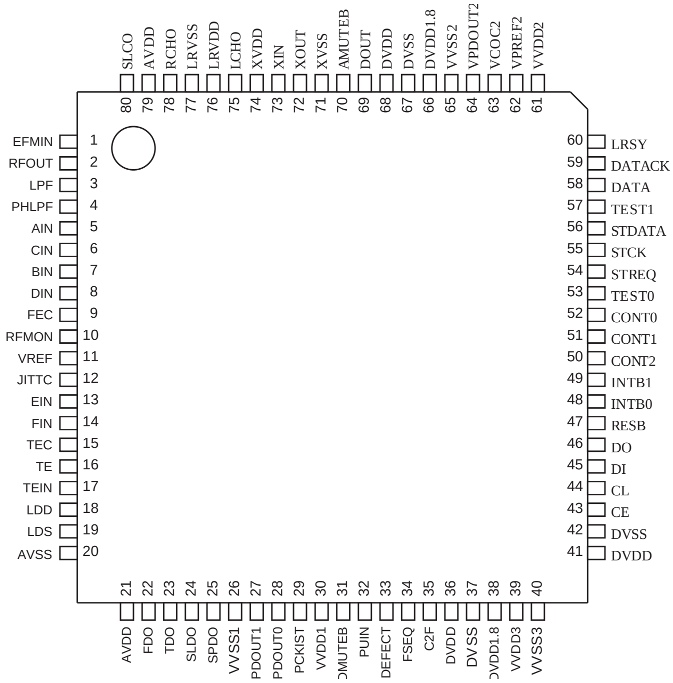

SA5810
1 FWD
2 REV
3 LDCONT
4 PS
5 IN 1
6 IN 2
7 PREVcc
8 POWVcc 12
9 VoL-
10 VoL+
11 Vo2-
12 Vo2+
13 Vo1-
14 Vo1+
15 Vo4+
16 Vo4-
17 Vo3+
18 Vo3-
19 GND
20 POWVcc 34
21 MUTE
22 OPOUT3
23 OPIN3-
24 OPIN3+
25 OPOUT4
26 OPIN4-
27 OPIN4+
28 BIAS

2)BLOCK DIAGRAM

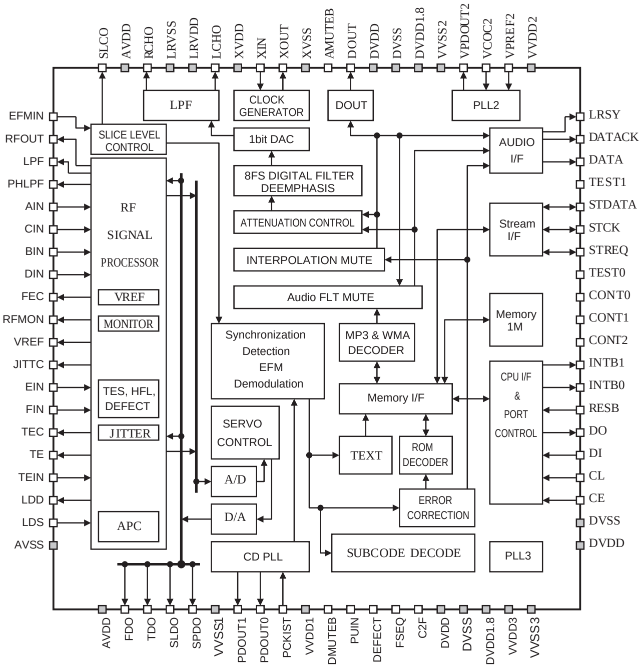

CH1~CH4 MUTE
POWVCC12 (CH3,CH4)
LEVEL SHIFT
LOADING PRE FWD REV
POWER SAVE
x3
PREVCC (PRE,LOADING)
POWVCC12 (CH1,CH2)
7.5k
16k
10k

IC801 LC78690W

1) PIN COFIGURATION


1 EFMIN
2 RFOUT
3 LPF
4 PHLPF
5 AIN
6 CIN
7 BIN
8 DIN
9 FEC
10 RFMON
11 VREF
12 JITTC
13 EIN
14 FIN
15 TEC
16 TE
17 TEIN
18 LDD
19 LDS
20 AVSS
21 AVDD
22 FDO
23 TDO
24 SLDO
25 SPDO
26 VVSS1
27 PDOUT1
28 PDOUT0
29 PCKIST
30 VVDD1
31 DMUTEB
32 PUIN
33 DEFECT
34 FSEQ
35 C2F
36 DVDD
37 DVSS
38 DVDD1.8
39 VVDD3
40 VVSS3
41 DVDD
42 DVSS
43 CE
44 CL
45 DI
46 DO
47 RESB
48 INTB0
49 INTB1
50 CONT2
51 CONT1
52 CONT0
53 TEST0
54 STREQ
55 STCK
56 STDATA
57 TEST1
58 DATA
59 DATACK
60 LRSY
61 VVDD2
62 VPREF2
63 VCOC2
64 VPDOUT2
65 VVSS2
66 DVDD1.8
67 DVSS
68 DVDD
69 DOUT
70 AMUTEB
71 XVSS
72 XOUT
73 XIN
74 XVDD
75 LCHO
76 LRVDD
77 LRVSS
78 RCHO
79 AVDD
80 SLCO

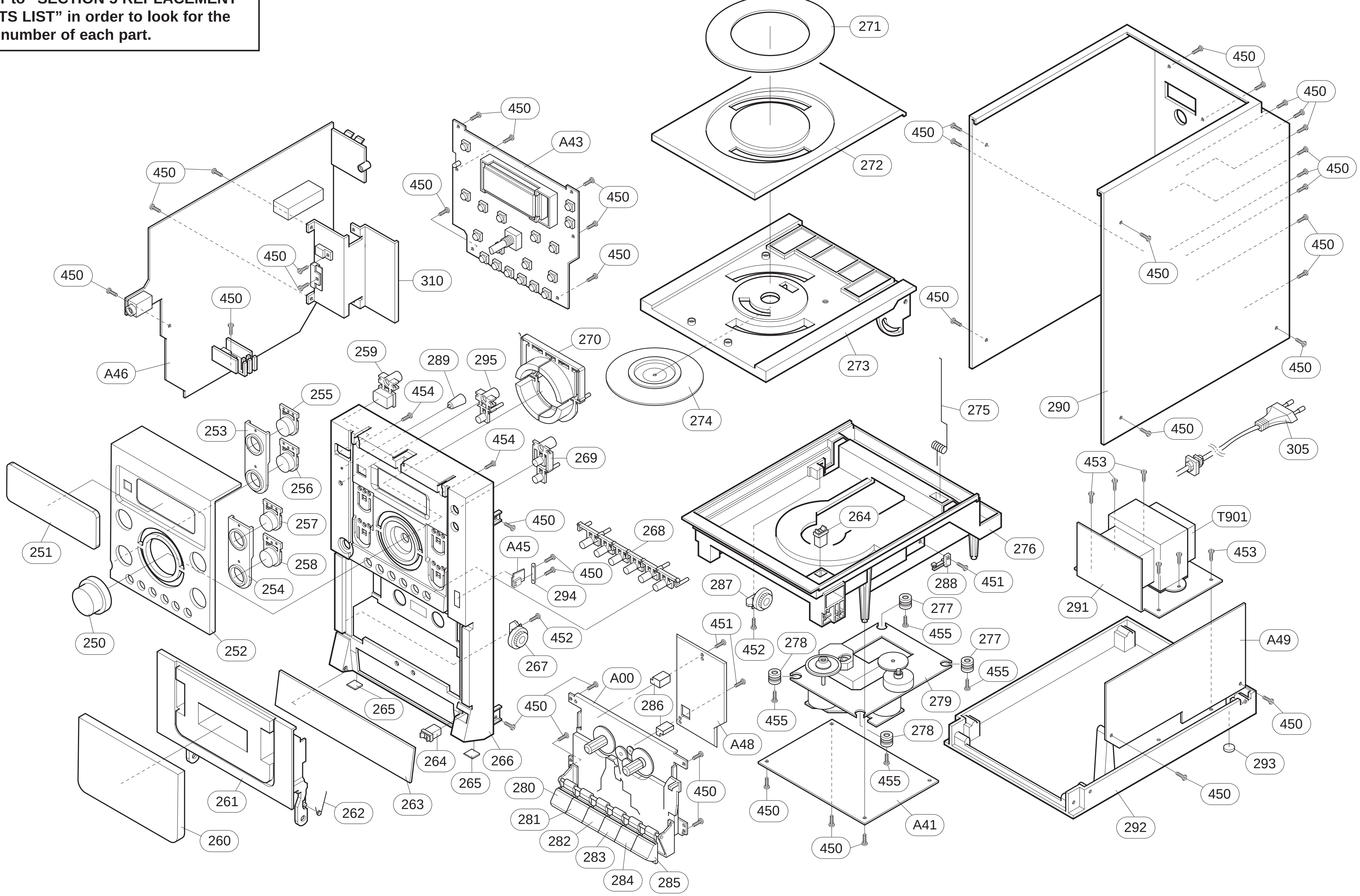
2)BLOCK DIAGRAM


LPF
CLOCK GENERATOR
DOUT
PLL2
SLICE LEVEL CONTROL
1bit DAC
8FS DIGITAL FILTER DEEMPHASIS
ATTENUATION CONTROL
INTERPOLATION MUTE
Audio FLT MUTE
RF SIGNAL PROCESSOR
VREF
MONITOR
TES, HFL, DEFECT
JITTER
APC
Synchronization Detection EFM Demodulation
MP3 & WMA DECODER
SERVO CONTROL
Memory I/F
TEXT
ROM DECODER
A/D
D/A
ERROR CORRECTION
CD PLL
SUBCODE DECODE
PLL3
AUDIO I/F
Stream I/F
Memory 1M
CPU I/F & PORT CONTROL

SECTION 3. EXPLODED VIEWS

CABINET AND MAIN FRAME SECTION

NOTE) **Refer to “SECTION 5 REPLACEMENT PARTS LIST” in order to look for the part number of each part.**

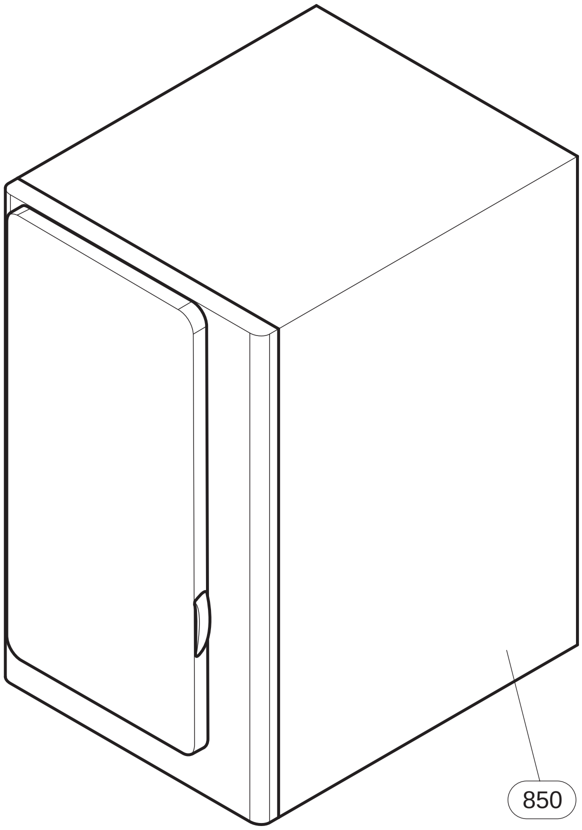

271
450
450
A43
450
272
450
450
450
450
450
450
450
310
450
450
450
273
450
270
259
289
295
A46
255
454
274
275
290
450
253
454
269
305
453
256
450
264
T901
257
268
A45
276
453
251
258
450
287
288
451
254
294
277
291
250
252
452
451
455
277
A49
452
278
455
267
279
A00
450
265
286
455
278
292
264
266
A48
293
450
261
262
263
265
280
450
455
450
A41
281
282
283
260
284
285
450

MEMO

MEMO

SECTION 4. SPEAKER SECTION

❑ MODEL: LXS-U150



MEMO